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THE MASTER PLAN OF SAN FRANCISCO

BUDGETING THE LAND

::

A Report on Present and Prospective Uses of Land in The City and County of San Francisco

November 30, 1944

SAN FRANCISCO CITY PLANNING COMMISSION

City and County of San Francisco

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SUMMARY OF FINDINGS

San Francisco is the central city of a large metropolitan area. The uses of land throughout the City reflect this important relationship, as well as the influences of climate, topography and limited area.

As the Bay Region develops, the pattern of land uses in San Francisco changes; the character and extent of these changes are matters of public concern.

Land within the city must be budgeted to fit present needs and to provide for future development.

Conservation and efficient use of this precious resource requires a Master Plan.

Such a Plan must be based upon an understanding of both present conditions and trends in the uses of land.

- - - - - - - - - - -

The land area of the City and County of San Francisco, exclusive of islands, is 44.3 square miles; the islands make up about one square mile, and 82.3 square miles of water lie within the corporate boundaries.

47% of the peninsular land area is in public ownership.

Military and Naval reserves occupy over 3 square miles

Highways, streets and alleys take up 11.3 square miles.

Public parks and recreational areas total 3.9 square miles; all other public lands, 2.6 square miles.

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Excluding the Federal holdings, the land area of the City available for urban use is 41.2 square miles. Over 8 square miles are vacant; of the remainder, about 1/3 is used for streets, 1/3 for residence and 1/3 for all other purposes.

Public parks and recreational areas occupy 3.9 square miles and provide 4 acres for each 1000 persons (1940), but over 40% of this is in Golden Gate Park alone.

Public and private schools occupy only half a square mile in all; there are over 200 school children for each acre of school land used.

All residences, including those over commercial uses, are placed upon 11.5 square miles; the average amount of land per dwelling unit is 1440 square feet.

A third of the dwelling units are in single-family houses; these occupy 7.5 square miles, or two-thirds of the residence area, and accommodate 41% of the population. About 7 out of 10 are of the row-house type.

Two-family dwellings occupy 1.7 square miles, and are used by 15% of the population.

The remaining 44% of the people live in apartments, using only 2.3 square miles, or 20% of the residence area.

About 1/6 of all dwelling units, sheltering 1/8 of the population, are in buildings where the ground floor is used for commercial purposes.

In some parts of the city as many as 1450 people live in a single block; the maximum density being 725 persons per acre.

- - - - -   - - - - -

Industrial and railroad uses occupy 1500 acres; but large areas zoned for industry have been taken by other uses, so that there is an actual shortage of sites for new plants.

Enough land is zoned for commerce to provide at the present ratio for a 50% increase in the 1940 population.

The land zoned for multiple dwellings is over twice the amount so used.

Areas zoned as single-residence districts exceed the amount of land actually used for single family dwellings by only 2% (92 acres).

- - - - -   - - - - -

Space, whether public or private, is valuable to the extent that it is effectively usable and appropriately used.

Uses have certain determinable relations to one another - as playgrounds to schools, hotels to business centers, industry to transportation, homes to workshops, and so on.

In many parts of the City, the indiscriminate mixture of land uses shows the lack of proper direction.

When space is badly proportioned and uses are mixed without discrimination, inconvenience, waste, disorderly appearance and loss of value are among the results.

This report develops information which will be increasingly useful in the preparation of the Master Plan, and will expedite its completion. Specifically, it will point the way toward:

More efficient use of our limited land resources,
- -- through the full development of vacant areas,
- -- through regulation of new developments
- -- by means of a modernized zoning ordinance;

Correct estimates of probable future demands
- -- for new industrial sites
- -- for highway and transit facilities
- -- for water supply and sanitation systems
- -- for dwellings of appropriate types;

Identification of sub-standard areas, characterized by
- -- mixtures of conflicting uses
- -- inadequate community facilities
- -- prevalence of land-overcrowding and congestion;

Establishment of satisfactory relationships between the total population and the amount of land available for housing purposes.

With reference to this last item, the report calls attention to these significant facts:

1. The amount of land needed for industry, commerce, utilities and services tends to increase regularly in proportion to the growth in population.

2. Even now, more land ought to be provided for recreation, school sites and other community uses; these requirements will grow if more people are to be served.

3. Hence, as the population living within the City increases, less and less land remains available for homes and the spaces about them.

4. High densities in residence areas, unless coupled with great improvements in building and open space designs, will tend to produce larger areas of blight, and thus retard further growth.

5. It follows, therefore, that the capacity of the City for increased population is limited by the space requirement deemed adequate for each type of dwelling.

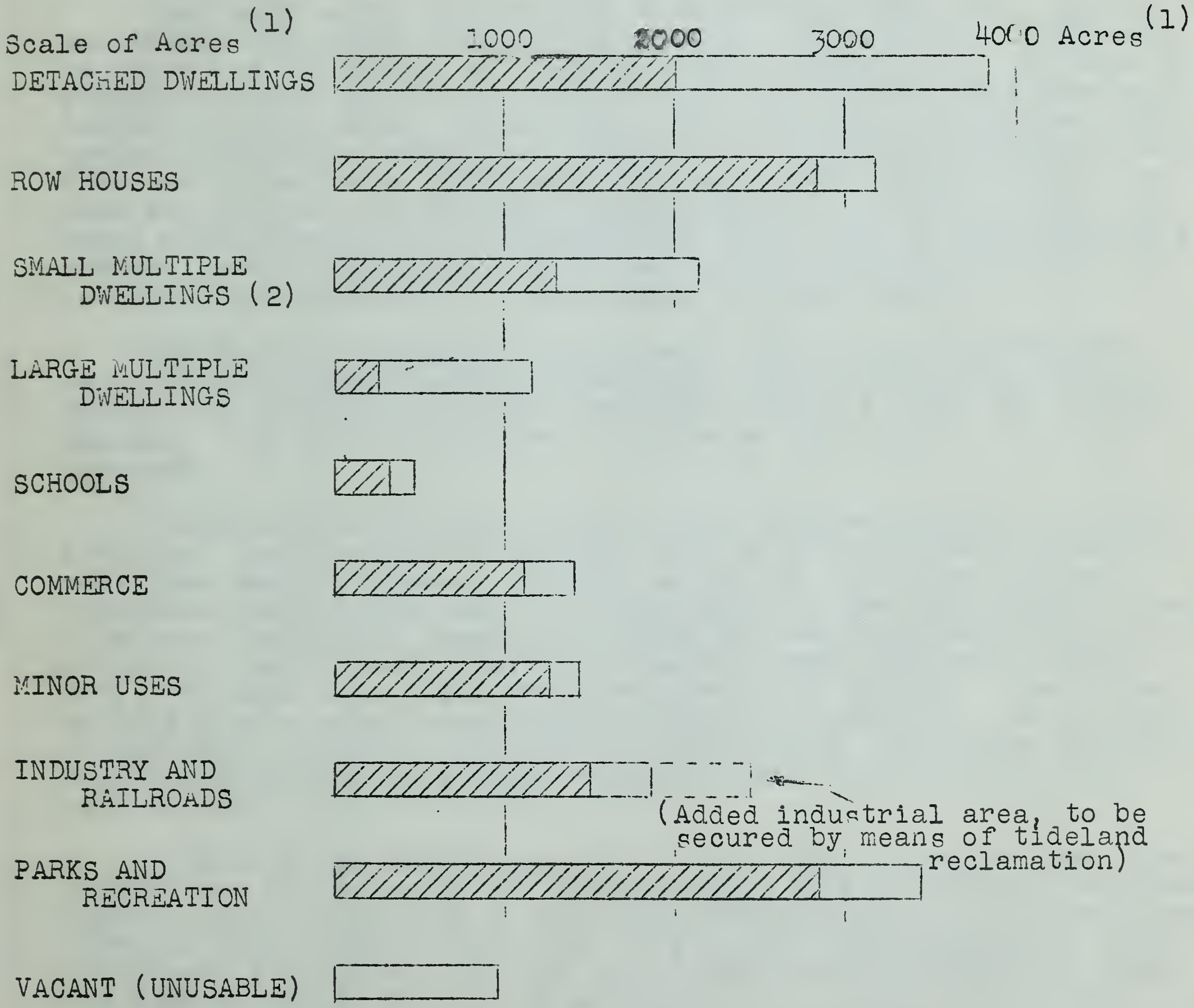
6. San Francisco can develop and prosper only by making the best possible use of its exceptional but limited land area. Adequate space must be provided, in the right places, for every business activity and for every need of the home. This, rather than mere growth in numbers, is the objective of the Master Plan.

AN EXAMPLE OF BUDGETING LAND

▨ The shaded portions of the bars show the distribution of land in San Francisco as found in the survey. (See Table 2)

▭ The unshaded portions of the bars make up a total area equal to that found vacant within the City.

▨▭ The total length of the bars indicates a possible "budget" of future land use distribution for an assumed population of 800,000; with all usable land developed in order to reduce excessive densities in residence areas and to allow more space for other activities. (See Plate 8)



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(1) Areas shown do not include streets
(2) Includes 2-Family Dwellings

BUDGETING THE LAND

San Francisco City Planning Commission - 1944.

I. INTRODUCTION

The Master Plan

When many people assemble in a relatively small area, and build the things they need, they create a city. The ability of any city to serve its own people and others outside depends upon the kind of structures which have been built in it, and how they have been arranged upon the land. In an ideal city the homes, workshops, play spaces and stores would be so placed as to produce a maximum of comfort and convenience, encourage efficiency and economy in the conduct of business, permit easy communication between the parts, and bring about the fullest utilization of every acre of land and every pleasant natural prospect. A Master Plan is an expression of the desire of the community to move toward such an ideal.

The Master Plan guides development but does not contemplate an overnight transformation of the city. Nor should it, for new habits, new standards and new technical advances alter the circumstances. The best laid plans of yesterday may soon be outgrown or outmoded.

A practicable Master Plan must also be based upon the obvious fact that the present city and the city of 20 or 30 years hence will have much in common. However extensive its major surgical operations and however bold its proposals for new improvements, the city as a whole will change but slowly as new structures replace the old. The physical plant that exists today represents untold hours of human labor, and vast investments of capital. Years pass while a single major improvement is proposed, debated, voted upon, blueprinted, financed, and finally constructed. New homes and new neighborhoods must live their allotted span, and old ones often outlive their best usefulness.

Plans for the improvement of the city must therefore rest upon a firm base of knowledge and understanding of its present characteristics. They begin with a searching examination of its present physical pattern, the peculiarities of its site, the adequacy of its structural facilities, and the amount and proportion of land which has been placed in various categories of use, or is vacant and available for future use. This report is a summary of the results of such an analysis for the City of San Francisco.

The most important possession of the citizens of San Francisco is the land upon which the City is built. Buildings destroyed may be rebuilt better than they were. But beneath is the solid earth of the Peninsula, incomparably situated and picturesque in its hilly topography. Except for a few hundred acres reclaimed by shoreline fills, the quantity of land is set by natural and political boundaries. The land area of the City is like a fixed budget. Within its limits we must arrange all our facilities for living.

Land, as Space

Every activity of our daily life requires its allotment of land, as space. There must be places for domestic activities, room for work, and space in the form of streets to provide for free movement from each part of the community to all the others.

Churches and schools, stores and office buildings, theaters and hospitals must have plots upon which to stand. For agreeable living, there must be space for parks and playgrounds, and for home grounds, yards and gardens. The storage of goods awaiting shipment, the preparation of food for market, the shifting of freight cars from terminals to industrial spaces, all these require land.

Trains, street cars and automobiles move over their allotted strips, libraries and fire stations occupy their appointed places. Provision for military defense, for the storage of water and the disposal of wastes must also be made. Open spaces are needed, too, to provide for light and the free circulation of air, to extend visibility, and to preserve natural outlooks and spots of scenic interest. Without these we may exist, but with them we know that living in the City is more healthful and satisfying.

Since the amount of this valuable commodity called space is limited in San Francisco, the way in which we distribute it among these varied uses becomes extremely important. Comfort and convenience are involved, to be sure, but the vigor of the business and industrial life of the city and its relative standing in a competitive world depend to a large degree upon our success in balancing the land "budget". Appropriate amounts of space must be made available for each activity, and in the right places.

The information contained in this report will permit appraisal of the use that has been made of land by private owners and public bodies in the building of the City to date. It will also serve for the establishment of new standards of land utilization.

The facts and figures given are all approximations, and none of them are intended to be more than that, for greater precision of measurement would only give a false impression of the accuracy of the conclusions drawn. Only the broadest interpretations can be trusted as guides to future requirements, and they are sufficient since the Master Plan is to be a general guide to private developers and public officials rather than an inflexible pattern.

Who Owns The Land?

In a sense, the whole city belongs to all its citizens, for they exercise certain controls over all of it through their elected officials. But the kind of control is not the same for all. Every parcel of land is either (a) publicly owned, or (b) privately owned. The publicly owned portion of the City is much more extensive than is ordinarily realized. Table 1 shows the major types of public ownership of land in San Francisco.

TABLE 1

EXTENT OF PUBLIC OWNERSHIP

Use	Sq. Miles	%
Military and Naval reserves	3.0	6.9
Highways, Streets & Alleys	11.3	25.6
Public Parks & Recreation	3.9	8.8
Lake Merced and Adjacent Water Lands	0.9	2.1
Miscellaneous Public Utilities	0.4	0.9
Public Schools	0.4	0.9
Public Buildings & Institutions	0.3	0.7
Vacant, in Public Ownership	0.5	1.2
TOTAL PUBLIC LANDS (Municipal, Federal & State)	20.8	47.0
TOTAL PRIVATE LANDS	23.5	53.0
LAND AREA OF PENINSULA	44.3	100.0

The principal item consists of the military and naval reservations. The Presidio alone occupies 1464 acres, or 2.3 square miles. The network of public streets and ways takes up 11.3 square miles, which is over one-fourth of the total city and county area. Public parks and recreational areas occupy 8.8%, the largest being Golden Gate Park, with 1040 acres. Altogether these public lands, Federal, State and city-owned, amount to 47% or nearly one-half of the entire area. (1)

Every taxpayer has what the lawyers call an "undivided interest" in this extensive public property. He has a right to believe that it will be managed so as to bring about its greatest utility and value. As part-owner, he has a proprietary interest in its

---

(1) The City and County of San Francisco also has extensive holdings outside the city limits, not considered here.

proper functioning. This in turn leads him to concern himself with the uses of all property which, although owned by others than himself, is served in one way or another by the public streets, parks, schools and other lands of which he is co-owner.

The use of public money to buy land for a playground, a new street or a fire-station in a neighborhood implies the right of all citizens through their government to control, if necessary, the way in which the land nearby is used. For the public as a whole, as owner of the streets, utilities, protective services, and other facilities, is in a sense the "senior partner" of every private property owner. The latter would in fact find his holdings of little or no value were it not for the contributions made by the municipality, which provides the services and accessories necessary to its use.

Responsibilities of Public Officials

The right to promote the general welfare through laws which place reasonable limitations upon the uses of private property is therefore quite fair and natural. From this point of view, the duties of public officials entrusted with the management of the city's affairs are of a dual character.

First, as to the publicly owned lands, they have the responsibility of acquiring whatever lands are required for the performance of public services or to meet public needs. These must not only be secured at the right time, but in the right quantity,and in the right places.

As to the lands remaining in private ownership, it is equally clear that public officials must make and enforce such regulations as are required to assure the protection of appropriate uses, and to prevent those whose results are harmful. Their obligation is to foster and protect individual enterprise, and to promote the public health, safety, convenience and general welfare by the exercise of such restraints in behalf of the whole community as are needed.

"Budgeting" The Land

The reservation and use of space in accordance with present and prospective needs will produce, like the wise budgeting of personal accounts, the maximum values attainable with the means at hand. We all know from experience that a budget involves a plan. It calls for a study of fixed demands, of present obligations, of future needs, and of attainable goals. It requires frequent adjustment to meet new situations, to compensate for past shortcomings, and to fit in with changed or more clearly defined objectives. So it is with a city's land use plan. It is necessary to learn all we can about present land uses and trends, to estimate as accurately as possible future land requirements for every urban activity, and to agree upon standards of city development which will make the most of every kind of space available.

TABLE 2

MAJOR USES OF LAND - SAN FRANCISCO

USES	AREAS		
	Acres	Sq.Mis.	% of Used Area
RESIDENCE (1) (Single, 4828 acres; 2-family, 1105 acres; multiple dwellings, 950 acres)	6883	10.74	32.4
COMMERCE (With dwellings over, 510 acres)	1123	1.75	5.3
INDUSTRY & RAILROADS (Railroads, 338 acres)	1503	2.35	7.1
UTILITIES (Including Lake Merced and adjacent water lands, 587 acres)	860	1.34	4.0
SCHOOLS (Including private schools, 81 acres)	330	0.52	1.6
INSTITUTIONS (Including churches, hospitals and public buildings)	416	0.65	2.0
PARKS & RECREATION (Includes acquired portions of McLaren Park; also golf clubs, etc.)	2864	4.48	13.5
Net Used Urban Area	13,979	21.84	65.9
STREETS (27.4% of Gross Urban Area)	7,244	11.32	34.1
Gross Used Urban Area	21,223	33.16	100 %
VACANT (19.6% of Gross Urban Area)	5,172	8.08	
Gross Urban Area	26,395	41.24	
MILITARY & NAVAL RESERVES	1,945	3.04	
Total Area (Exclusive of Islands)	28,340	44.28	

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(1) Does not include dwellings over commercial uses.

II. HOW WE USE OUR LAND

General Proportions of Proportions of Present Land Uses

The nine major ways in which urban land is used (with vacant land as a tenth item) are listed in Table 2, which presents a general summary of the results of the survey. The areas are given in acres and in square miles. Residence use is the most extensive of all, taking 11.5 square miles, if we include the 510 acres used for stores with dwellings in the upper stories. The second in order of extent is the area used for streets, amounting to 11.3 square miles. Over 8 square miles are vacant, and nearly 4.5 square miles are used for recreational purposes.

The first seven items together constitute the net used urban area of 21.8 square miles, and adding the streets gives the gross used urban area, 33.2 square miles. The percentages given are of this latter figure, in order to show the correct proportions of used land (roughly 1/3 for residence, 1/3 for streets, 1/3 for other purposes). Adding the vacant land gives the gross urban area. This and the 3 square miles retained by the Federal government for military and naval purposes make up the total area (44.3 square miles) of the peninsula north of the city and county line. Island portions of the city and county have not been included in the survey.

Relation of Uses to Population

The bare totals given in Table 2 are of limited usefulness. The percentages, even when corrected as shown by omitting special uses like the Presidio, and the vacant areas, are still somewhat unreliable as a basis for comparison with other cities, or for estimates of future requirements.

Emphasis in this report will therefore be placed upon a more significant set of figures, in which the amount of land in each use is related to the population served. For this purpose a unit of 1000 persons (called milcapita for convenience) will be used, so as to make possible direct comparisons between the ratios of land to people in various parts of the city. This will also provide a measure to be used in comparing urban uses here with those in other cities of various sizes.

For example, to say that San Francisco uses 3.96% and Detroit 3.77% of its total area for commercial purposes is a true, but incomplete statement. It is important also to know that in San Francisco, for each 1000 persons of the population, there are 1.75 acres used for business, while in Detroit there are 1.98 acres, reversing the picture. On the other hand Detroit has in proportion to total area only slightly more land used for industry and railroads than San Francisco (6.3% and 5.3%), but devotes 3.33 acres per milcapita to these uses as against only 2.35 acres per milcapita here.

TABLE 3

COMPARISON OF FOUR URBAN AREAS

	DETROIT Central Part	SAN FRANCISCO	ST. LOUIS	LOS ANGELES Central Part
Population (when surveyed):	395,000 (1)	641,000	822,000 (1936)	644,000 (2)
USES	Acres Per Milcapita	Acres Per Milcapita	Acres Per Milcapita	Acres Per Milcapita
Single Res.	4.18	7.53	8.40	18.23
2-Family Res.	2.75	1.71	3.12	(3)
Multiple Res.	1.79	1.50	3.05	2.17
Commerce	3.50	1.75	2.15	3.30
Industry	1.88	1.82	1.69	1.62
Utilities	.39	.43)		(.37
Schools	.30 (4)	.51)	2.11 (5)	(.77
Institutions	.61	.65)		(.39
Parks & Recreation	3.09	4.47	3.77 (6)	2.49
Other Uses	1.12	.53	5.73 (7)	2.02
NET USED AREA	20.42	20.89	30.02	31.36
"Used" Street Area	8.31	7.91	10.71 (8)	12.05
GROSS USED AREA	27.92	28.80	40.73	43.41
TOTAL AREA	29.14	41.18 (9)	48.48	55.55(10)

DENSITY BASED ON:	Persons Per Acre	Persons Per Acre	Persons Per Acre	Persons Per Acre
Residence Area	114.7	93.1	68.5	49.0
Net Used Area	51.0	47.8	33.3	31.9
Gross Used Area	35.8	34.7	24.5	21.4
Total Area	34.3	24.3	20.6	18.0

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(1)Portion inside Grand Blvd.-1943
(2)4 Central Areas-L.A.County 1941
(3)Negligible, included above
(4)For entire city, 0.60
(5)Listed as "institutions and public",7.23,less park and cemeteries; see note 7.
(6)Publicly owned only.
(7)Cemeteries, 1.50(est'd), and 4.23 listed as "unrestricted".
(8)All Street Area.
(9)Military reservations excluded
(10)Non-urban area excluded.

Comparison with Other Cities

In Table 3 the uses of land, per milcapita, in San Francisco are set beside corresponding figures from other cities. The comparison is made with the central portion of Detroit (1), and the 4 central "statistical areas" of Los Angeles County (2), since the local figures are for the most intensively used portion of the Bay Region. The figures for St. Louis (3) are for the entire city. They differ from the others in consequence of the inclusion of relatively large areas, apparently used for drainage and for cemeteries.

The division of the residence area between single and multiple dwellings shows wide differences. The amounts used reflect variations in the proportion of the units of each type to the whole, as well as in the average lot-size. St. Louis and Detroit use relatively large amounts for two-family dwellings. In Los Angeles the ratio for single dwellings reflects the prevalence of detached dwellings (rather than row houses) as well as the small proportion of multiples.

The relatively large use of land for commerce in Detroit and Los Angeles is a characteristic of rapid growth and of areas where the automobile has influenced development. The ratio in San Francisco is the same as that which existed in Chicago in 1870, when that city had a population of about 300,000. Industrial requirements differ less widely, because major industries are usually located further out, so that the differences that exist in the metropolitan regions as a whole are not reflected in these central areas.

As to minor uses, the similarity of the per capita requirements is apparent, except in the case of St. Louis, where the data available did not segregate these uses, and possibly included some which would have been classified as non-urban here. Schools required 0.51 acres per milcapita here, 0.77 in Los Angeles and 0.60 in Detroit (whole city). Utilities and institutions together required 1.08 acres here, 1.00 in Detroit and 0.76 in Los Angeles. With other uses varying so widely, the relative uniformity of these is significant.

The variations in all these ratios are due, not merely to differences in size, but also to age, topography, climate and economic background, among other things. They demonstrate that the only reliable index to future requirements in a given community is to be found in the inventory of that community.

Table 3 also gives the population densities, calculated on the bases of total, gross used, net used and residence area. These show how strongly such figures are affected by variations in vacancy, percentage of streets, and non-residence uses.

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(1) Detroit City Plan Commission Survey, 1943-Preliminary Tables.
(2) Master Plan of Land Use, County of Los Angeles, 1941 - Data for Central, Wilshire, and the urban portions of East and N.E. statistical areas- Tables 7 and 35.
(3) Urban Land Policy - St. Louis -1936 - Tables 3 and 4.

TABLE 4

ZONING AND USES COMPARED

SYMBOL	USES	LAND ZONED		LAND IN USE	
		Acres	% of Zoned Area	Acres	% of Used Area
R-1	Single Dwellings	4920	32.4	4828	47.4
R-2	Multiple Dwellings, Churches, etc.	5848	38.5	2397	23.6
R-2	Golf & Country Clubs (private)	316	2.1	316	3.1
C	Commerce	1603	10.6	1123	11.0
L	Light Industry	1062	7.0	697(1)	6.8
H	Heavy Industry	1393	9.2	827(2)	8.1
U	Unrestricted	40	0.3		
	NET USED AREA			10,187	100%
	NET UNUSED AREA			4,995	
53.6%	TOTAL ZONED AREA	15,182	100%	15,182	
14.0%	Public Uses, or reserved for same (3)			3,969	
32.4%	Streets, Military & Naval reserves			9,189	
100%	TOTAL, CITY OF SAN FRANCISCO (Land Area, Excluding Islands - See Appendix A)			28,340	

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(1) Includes land used for utilities (privately owned)
(2) Includes railroad lands
(3) Actually, much of the land used or reserved for public purposes is zoned (principally in R-2). To clarify the proportions of the private uses, such public lands have been omitted from the zoned areas set forth in the body of the table, and are included in this total.

Comparison with Zoned Areas

It is of interest to examine the figures showing how much land has been placed in the various districts under the zoning ordinance, which has been in effect some 21 years. In preparing Table 4, all areas in public use were deducted, so as to show the area in private use or vacant within each district. The table shows only a little over half (53.6%) of the total as subject to zoning, under this definition.

The amounts zoned are given, and also the amount used for the purposes allowed in each district. It is to be understood that many of the more restricted uses are actually located in less restricted districts (as residence in commercial district, commerce in industrial) so that there is only a quantitative relationship to be inferred. All private institutional uses, including private schools, have been included as uses corresponding to the R-2 district, as that is the district within which most of them are found.

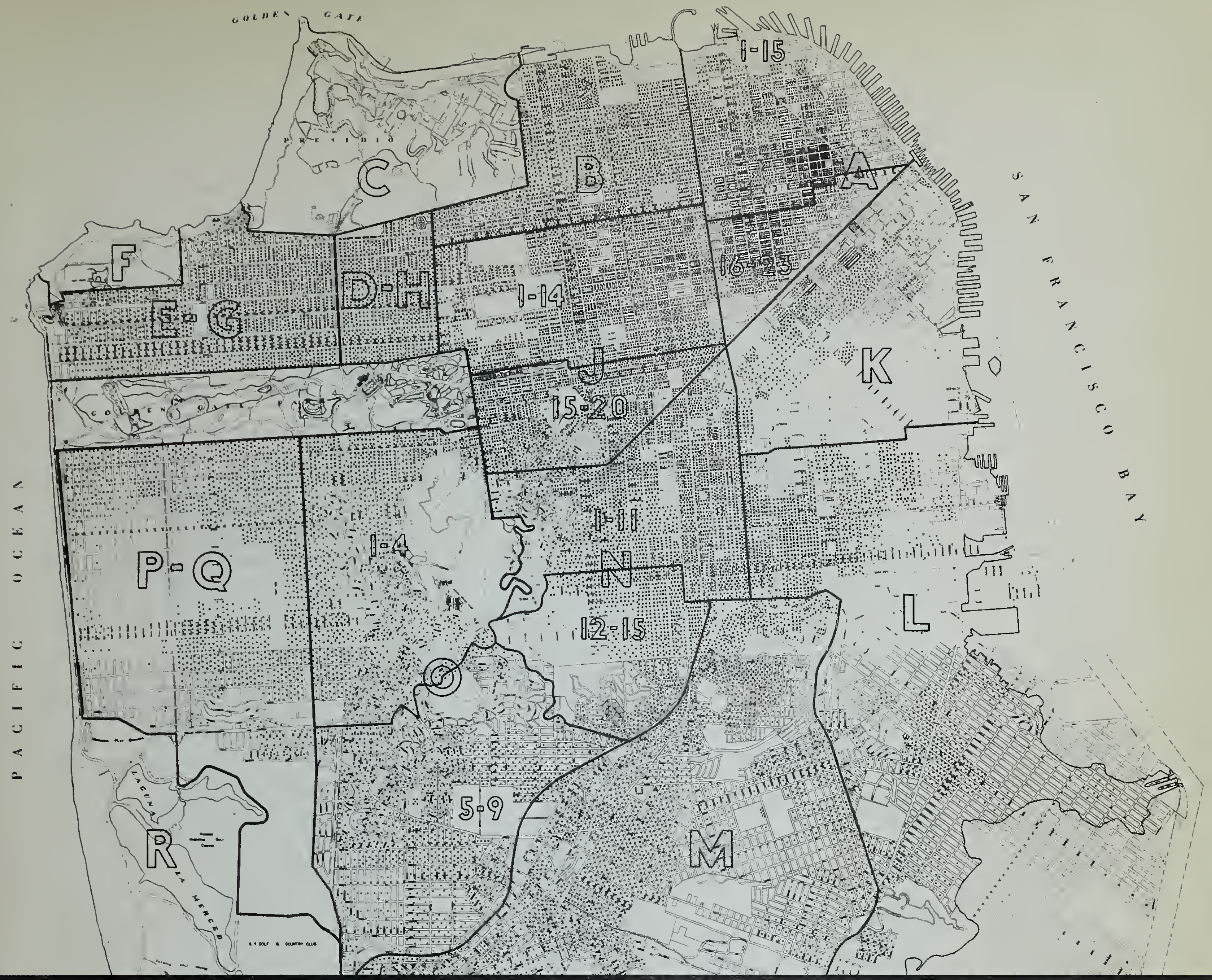
The R-1 district, as its symbol implies, is one in which only single dwellings are allowed. This, however, includes row houses which are much more closely spaced than the single-family detached dwelling. Only 32% is zoned for this use, which occupies over 47% of the net total actually in urban use.

The R-2 district permits all other types of residence structures and other neighborhood uses, such as churches, hospitals, etc. The golf and country clubs in the R-2 district have been shown separately as not a comparable portion of the area available for typical R-2 uses. The land zoned for multiple dwellings is over twice the amount so used. If all developed at only 150 persons to the acre it would provide housing for 877,000 persons.

Quantitatively, enough land is now zoned for industry to provide working space for a population of over 1,000,000 at present rates. Yet there is a shortage of industrial sites, because of other uses in these districts, or lack of facilities in certain areas. Enough land is zoned also for commerce to provide, in the same proportion as indicated by present uses, for over 1,000,000 persons.

Thus if as much land were actually available for each use as the quantity zoned would indicate, there would be ample room for growth. Actually the mixture of uses, their presence in improper districts, and the unavailability under present conditions of much of the vacant land in each district have produced an acute shortage of sites for almost every type of use.

The revision of the zoning plan to fit qualitatively with the existing and proposed pattern of land uses, and quantitatively with the expected or desired total population to be served, must be a major objective during the coming years.



POPULATION AND STUDY AREAS

Each dot represents 25 people (as of 1940 U. S. Census)

Study Areas are combinations of U. S. Census Tracts.

A (1 - 15)	NORTH BEACH - CHINATOWN	**K**	SOUTH OF MARKET
A (16 - 23)	DOWNTOWN	**L**	POTRERO - BAY VIEW
B	MARINA - PACIFIC HEIGHTS	**M**	VISITACION - EXCELSIOR
C	PRESIDIO	**N (1 - 11)**	MISSION
D - H	PARK - PRESIDIO, EAST	**N (12 - 15)**	NOE - GLEN PARK
F	LINCOLN PARK	**O (1 - 4)**	SUNSET - WEST PORTAL
E - G	PARK - PRESIDIO, WEST	**O (5 - 9)**	OCEAN AVENUE
I	GOLDEN GATE PARK	**P - Q**	SUNSET - PARKSIDE
J (1 - 14)	WESTERN ADDITION	**R**	MERCED
J (15 - 20)	BUENA VISTA		

PLATE 1

POPULATION DENSITY BY STUDY AREAS

Census Tracts (See Plate 1)	POPULATION Thousands(1)	AREA Acres	DENSITY IN PERSONS PER ACRE Gross	True(2)	Residence(3)
A (1-15)	69.5	988	70.4	78.2	210
A (16-23)	36.2	544	66.5	68.3	379
B	55.9	217	45.9	51.5	100
C	(4)	1470	-	-	-
D-H	22.2	482	46.0	47.0	87
F	(4)	238	-	-	-
E-G	40.8	1288	31.7	36.3	68
I	(4)	1102	-	-	-
J (1-14)	72.6	1339	54.2	64.8	145
J (15-20)	37.4	652	57.3	62.3	127
K	23.4	1580	14.8	16.4	287
L	41.9	3443	12.2	23.2	67
M	60.7	3519	17.3	31.0	61
N (1-11)	56.0	1298	43.1	51.0	106
N (12-15)	20.3	865	23.5	40.0	67
O (1-4)	32.1	1778	18.1	36.7	58
O (5-9)	26.3	1962	13.4	23.0	39
P-Q (1943)	45.3	2960	15.3	26.4	50
R	(4)	1614	-	-	-
Total for City	641.0	28,340	22.6	34.7	87
Excluding C,F,I & R(4)		23,917	26.8	39.5	

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(1) 1940 Census; except P-Q, estimated 1943 from house count.
(2) Adjusted for Military Reservations and vacant areas.
(3) Based on the net residence area, including residence over commercial uses.
(4) Population (1940) negligible.

Division of The City into Study Areas

The comparison of the various parts of the city with one another is made possible by the division of the area into statistical units called Census Tracts. For each of these 118 units the Bureau of the Census provides information as to the population and housing characteristics. The Real Property Inventory of 1938 also used them as a basis, and the land use figures have been compiled in the same way.

The detailed figures by individual tracts have been combined, however, into 19 larger units for presentation in this report. These units, called "study areas" represent fairly well-known portions of the city, having relatively uniform characteristics. For example, the ten Census Tracts whose numbers have the prefix B are here considered as a unit for study, and called the "Marina-Pacific Heights" study area. Plate 1 shows the boundaries of these 19 areas, and gives a key to the census tracts included in each. (The Plate also shows the distribution of population as of 1940, with one dot on the map for each 25 persons enumerated in the Census of that year.) The acreage in each study area was obtained from measurements of maps, supplemented by other data.

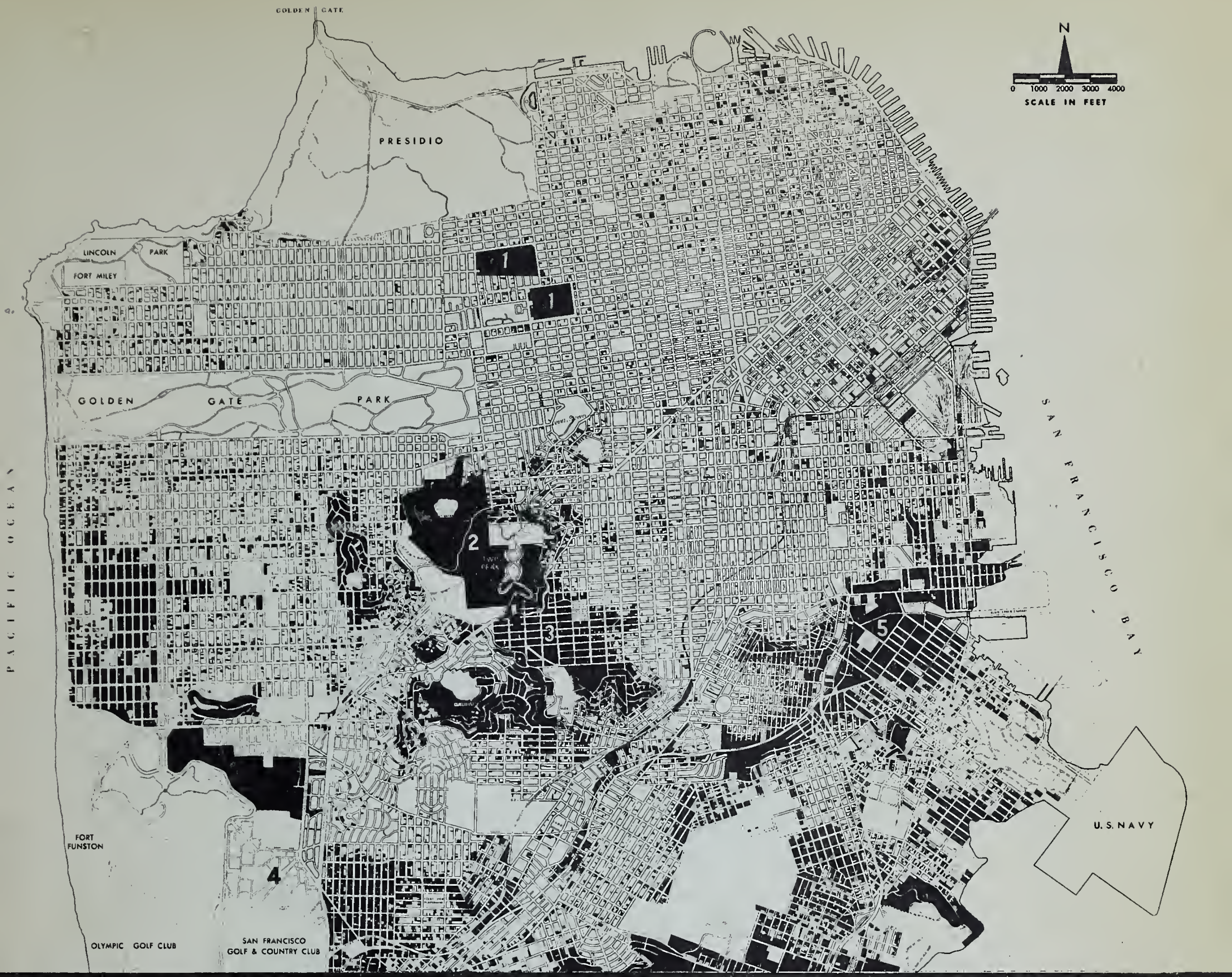
Population Density

Table 5 gives the area in acres, the population estimate at the time of the survey and the average density of population for each of the 19 study areas shown on Plate 1. (The area and density figures for individual census tracts are given in the Appendix.)

As indicated in the footnotes, the figures as to overall density are supplemented by certain adjusted figures. "True" density is the term applied to the result of dividing the population by the sum of all used urban land plus the area of streets serving used property. The latter figure is obtained by reducing the total street area as given by Table 14 in proportion to the percentage of vacant urban land. (See Table 6) The "true" density is a more reliable index of conditions in the built-up portions of the districts, as it is not affected by the inclusion of unoccupied blocks.

"Residence" density is the number of persons in the district divided by the number of net acres used for residence purposes, including mixed residence and commercial land. It gives a measure of relative crowding in the actual residence areas, unaffected by the amounts of non-residential uses. The large number of residential hotels in the Down-Town and South of Market study areas is reflected here in the high residence density figures.

The range of the figures for various parts of the city above and below the city average should be compared with their distance from the center of population. The effect of population changes on future densities is discussed in Part IV of this report, where it is shown that residence density tends to increase much more rapidly than the overall density, as population grows.



VACANT LAND

Vacant areas shown in black.

1 **AREAS FORMERLY OCCUPIED BY CEMETERIES**

2 **HILLY AREA AROUND TWIN PEAKS**

3 **AREA LACKING TRANSPORTATION;** streets not adapted to hilly topography.

4 **PARKMERCED** (Metropolitan Life housing project), vacant at the time of survey, now partly occupied.

5 **POTENTIAL INDUSTRIAL AREAS,** vacant at the time of survey, now generally occupied for war housing, storage and other military purposes.

AREA AND PROPORTION OF VACANT LAND

Census Tracts	Study Area	AREAS Used	 Vacant	% (2) Vacancy
A (1-15)	No. Beach-Chinatown	569.4	63.9	10.1
A (16-23)	Down-Town	323.6	8.6	2.6
B	Marina-Pacific Hts.	727.5 (1)	47.1	6.1
C	Presidio	6.0 (1)	-	-
D-H	Park-Presidio, East	351.1	6.4	2.0
F	Lincoln Park	184.1 (1)	-	-
E-G	Park-Presidio, West	784.6	107.6	12.6
I	Golden Gate Park	1041.1	-	-
J (1-14)	Western Addition	767.4	150.3	16.4
J (15-20)	Buena Vista	417.1	37.1	8.0
K	South of Market	978.7	104.9	9.7
L	Potrero-Bay View	1307.6(1)	1104.1	45.6
M	Visitacion-Excelsior	1565.6	955.0	37.8
N (1-11)	Mission	721.2	142.9	16.5
N (12-15)	Noe-Glen Park	339.8	262.8	42.0
O (1-4)	Sunset-West Portal	843.9	546.6	39.3
O (5-9)	Ocean Avenue	843.7	552.9	39.5
P-Q	Sunset-Parkside	1125.5	1008.6	47.3
R	Merced	1153.3(1)	73.0	6.0(3)
	Total for City	13,979.2	5171.8	27.0

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(1) Omitting Military & Naval reserves.
(2) Percentage of net used plus vacant land.
(3) Excluding Lake Merced and adjacent lands, 11.4% vacant.

Vacant Land

An important factor in planning studies is the amount and distribution of unused, vacant land. Table 6 shows the acreage of used and vacant land by study areas, and for the city as a whole. Both figures are "net", or exclusive of street area. The military and naval reserves are not considered as urban uses, and are therefore omitted. The total of 5,172 acres or 8.1 square miles of vacant land includes about 151 acres of publicly owned land not reserved for any specific public use, but does not include some 177 acres held in public ownership which are so designated. It also includes 105 acres designated (at that time) for future acquisition as part of McLaren Park, not shown as vacant on Plate 2.

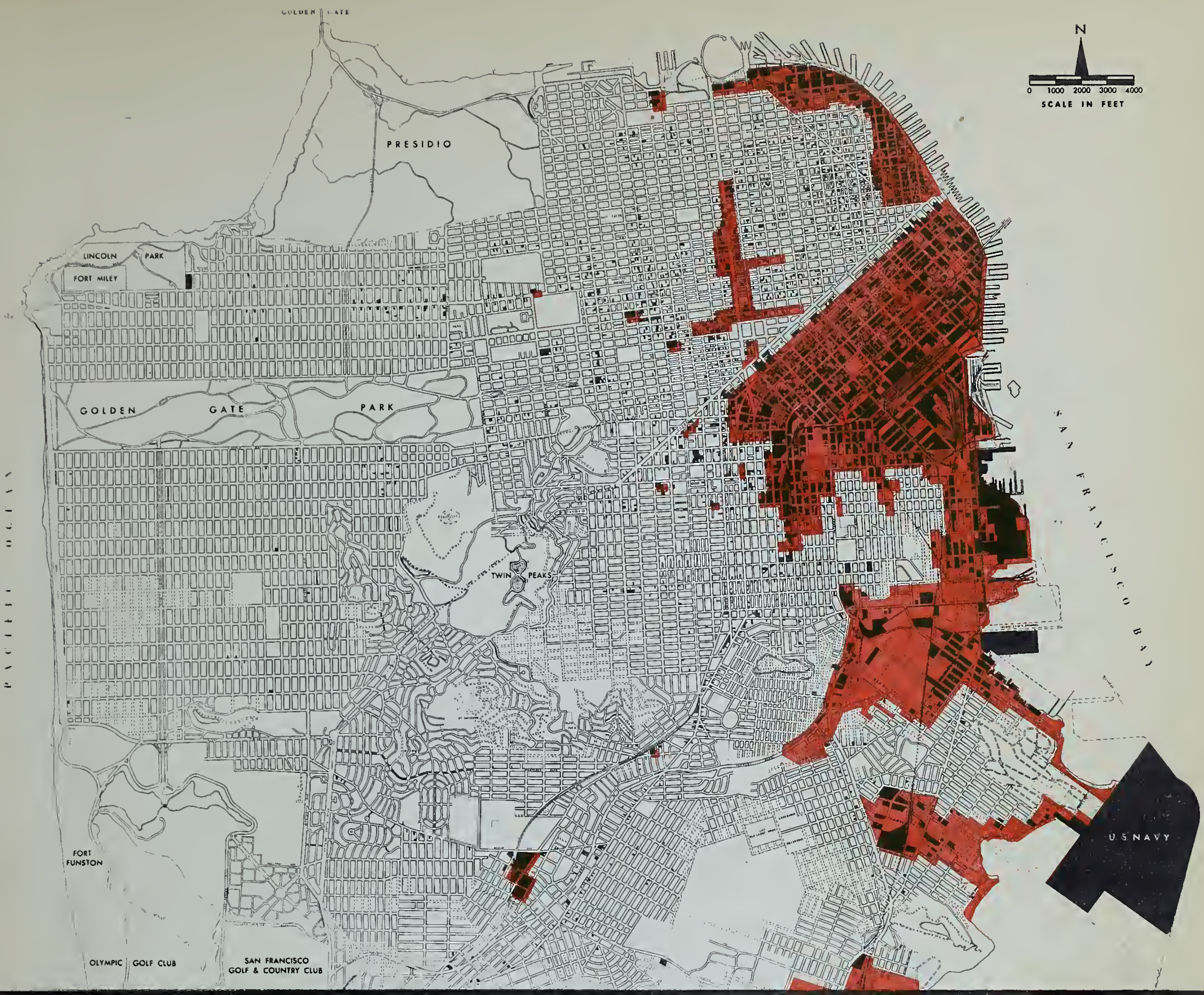
The percentage of vacancy is computed by comparing the area of vacant land with the sum of the used and vacant land. Twenty-seven out of every 100 acres of the net urban land were found to be vacant in 1940, a fact more significant than the gross ratio of vacant land to the city's total area, which was a little over 18%.

The ratio today is somewhat less, because of military uses and war housing. Also, in the Sunset-Parkside District, the area now occupied by the Metropolitan Life Insurance Company's project (Parkmerced) was treated as if vacant, because at the time of the survey none of the houses were occupied, and the omission was necessary to preserve ratios to population of the remainder.

The Districts with the greatest ratios of vacancy are Potrero-Bayview, Noe-Glen Park, Ocean Avenue, Sunset-West Portal and Visitacion-Excelsior, all in the southern portion of the City. The lowest ratio is found in the Down-Town area, with the exception of the eastern part of the Park-Presidio area (Census Districts D and H), where 98% of the lots are occupied.

In Plate 2, which shows in black all vacant areas within the City, the scattering of small vacant parcels is seen to constitute a large fraction of the whole. On this plate the new Parkmerced subdivision is shown as occupied. The vacant areas formerly occupied by Calvary and Laurel Hill cemeteries are the only large parcels in the northerly portion of the city. In the center the vacant lands on the hills around Twin Peaks are shown. Near the southerly boundary, the large area left blank is the site of the proposed McLaren Park. Part of this has been acquired, and part is vacant, but has not been shown in black on the map, because of the proposed purchase for park purposes. (See Plate 6, Recreation)

In the following Parts of this report, each of the major non-residential and residential uses of land will be considered in greater detail.



INDUSTRY

Industrial uses shown in black.

Districts zoned for industry shown in red.

The U. S. Navy Yard is not included as industrial area in the tabulations, but is shown here as a center of industrial employment.

In some sections, such as Hayes Valley, numerous small industrial uses, outside of the districts zoned for industry, contribute to the spread of blight.

PLATE 3

III NON-RESIDENTIAL USES OF LAND

Land for Industry

San Francisco is primarily a metropolitan business center. It is important also as a wholesaling and shipping center, and a surprising amount of space is utilized for light manufacturing, food processing and related industries, and for port and harbor facilities.

In all, industrial activities and railroads use over 1500 acres, distributed as shown in Table 7. About 87% of industrial land use is found between Van Ness Ave., Army St., Bay Shore Blvd. and the waterfront, within Census Districts which together constitute 23% of the total city area. The amount of land now zoned for industrial uses is 2495 acres, 93% of which is in the three Census Districts mentioned.

A comparison of the districts (shown in red on Plate 3) with the actual distribution of industrial uses shows, however, that a very considerable portion are not within the district intended to accommodate them. Conversely many residential and commercial uses are found within the industrial districts.

This means that the excess zoning for industry is not indicative of the availability of land for new industry. For example, in the area south of Market (Census District K) only 2/3 of the 995 acres zoned for industry are so used, but less than 10% of the whole area is vacant. Commercial and residential uses in this area exceed the amount zoned for them by 204 acres. Most of these must therefore be occupying land zoned for industry.

Industrial uses required 1.82 acres for each 1,000 persons in the city as a whole, and railroad uses (yards, terminals, rights-of-way, shops) 0.53 acres. (1) The latter use is not likely to increase a great deal, and (except in the event of the extension of transcontinental lines across the Bay) may be considered as relatively constant in rough calculations of future requirements. But the acreage of industrial land will tend to rise with the population, and more particularly with that proportion of the population which is industrially employed.

If all industries required the same amount of space per worker, and if this ratio were never affected by technological changes, the ratio of industrial area to the corresponding labor force would be direct and simple. This is, of course, not the case. Nor can we assume that all the workers will live within the area under study.

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(1) Railroad lands required in all about 338 acres, of which over 300 were found in Census Districts K and L (South of Market, Potrero-Bayview). The location of these is significant in connection with the selection of areas for industrial use.

TABLE 7

LAND USED FOR INDUSTRY AND RAILROADS

Census Tracts	Study Area	Total Acres	Acres Per Milcapita
A (1-15)	North Beach - Chinatown	102.3	1.47
A (16-23)	Down-Town	32.5	0.90
B	Marina-Pacific Heights	10.9	0.20
C	Presidio	-	-
D-H	Park-Presidio, East	4.4	0.19
F	Lincoln Park	-	-
E-G	Park-Presidio, West	0.5	0.01
I	Golden Gate Park	-	-
J (1-14)	Western Addition	38.6	0.53
J (15-20)	Buena Vista	4.7	0.13
K	South of Market	667.6 (1)	28.53
L	Potrero-Bay View	532.6 (2)	12.71
M	Visitacion-Excelsior	48.8	0.81
N (1-11)	Mission	47.1	0.84
N (12-15)	Noe-Glen Park	2.3	0.11
O (1-4)	Sunset-West Portal	1.6	0.05
O (5-9)	Ocean Avenue	7.9	0.30
P-Q	Sunset-Parkside	0.9	0.02
R	Merced	-	-
	Total for City	1502.7	2.35
	Industry:	1165.1	1.82
	Railroads:	337.6	0.53

---

(1) Railroads, 187.0 acres
(2) Does not include Navy Yard; Railroads, 116.7 acres.

The land used for all industry in the City averaged 1300 square feet for each person reported by the Census as employed in manufacturing establishments, and the latter included in 1937 about 6% of the population. The effects upon the proportion so employed of the changes produced by the war in our economy are very difficult to appraise. But if we should assume as a maximum that 8% of a future population of, say, 900,000 were to be industrial workers, with other factors in the problem remaining as at present, the land required would be 72,000 times 1300 square feet, or 2150 acres. That would be 2.4 acres per milcapita instead of 1.8 acres, as at present.

Shortage of Industrial Sites

Quantitatively, the amount of land now zoned for industry (2495 acres) would provide for even this extreme, with a margin of 345 acres for railroad lands falling within it. (Railroad lands now total 338 acres). Actually, there is a marked shortage of industrial sites, for the following reasons:

1. Much of the land zoned for industry is already in use for commerce or residence. (This is especially true in Census Districts K-1, K-2, K-3).

2. Much of the vacant land in such zones consists of small, scattered parcels, not suitable as to size for new developments. (See Plate 2)

3. The cost of developed land, especially where the removal of obsolete buildings is involved, discourages its use for new industries.

4. The layout of lots and blocks is not favorable to assembling large sites. (1)

Adjustment of this situation is called for, and requires the provision of ample sites for new industry with a real, rather than an apparent, margin for sound growth. The creation of new level areas by tideland fills would provide excellent industrial sites, well located with reference to rail and shipping facilities. (2) This would permit at the same time, reclassification for active commercial or residential use of some of the areas inappropriately zoned as industrial.

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(1) A further reason, which has come into force since this survey was made, is operative during the war period, when military and naval activities have absorbed large acreages for warehousing and other terminal operations. The probability of retention of this land after the war will have to be carefully estimated.

(2) See Shoreline Development Report, September, 1943.

Revision of Zoning

The larger areas selected for industrial use in any revision of the present zoning, in addition to having general characteristics making them suitable for such development, should be bounded wherever possible by natural open spaces, by wide arterial thoroughfares or railroad property, or by intermediate uses (commercial, institutional, public utility, or certain types of recreation activities.) Smaller areas should also be carefully selected, restricted to light industry, and so placed as to minimize any retarding effect on the uses of surrounding property.

On Plate 3, where industrial uses are shown in black, and the areas zoned for industry in red, a few uses such as carbarns and street-railway shops are included, although entered as "utility" along with reservoir sites, gas storage tanks, etc. in Table 13. At present small industrial zones have been established to allow for these, but care is needed in planning for the use of adjacent areas, and in some cases an intermediate public use such as an athletic field might well form a buffer to protect nearby residence uses.

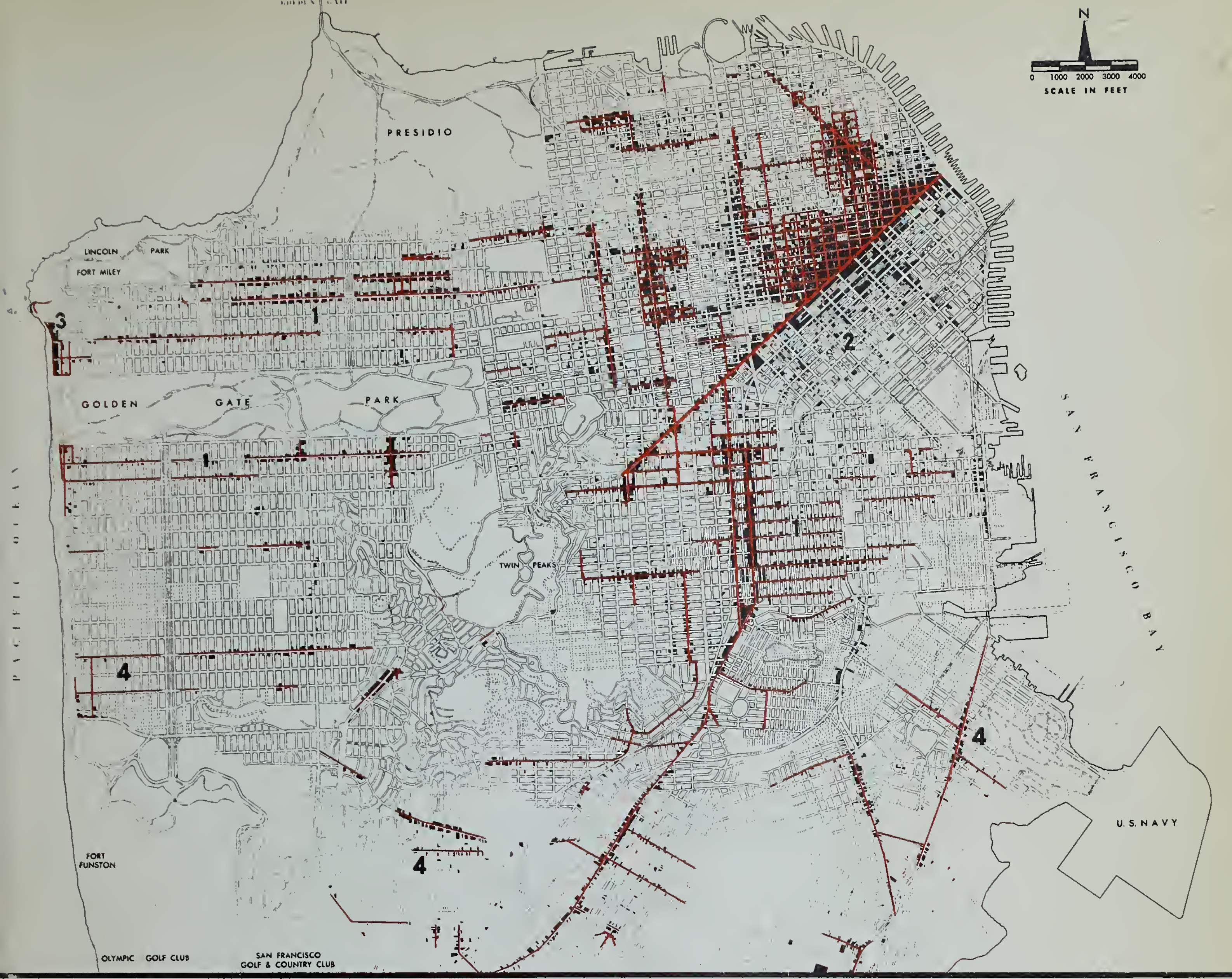
On the whole the zoning ordinance has been fairly effective during the past 20 years in preventing the scattering of industrial uses through the better residential areas. In some places, however, where uses are mixed without discrimination, the result is inconvenience, waste and disorderly appearance.

The problem now is to readjust the zoning in the light of modern demands, to provide intermediate districts for types of industrial uses which are not objectionable in connection with the heavier commercial uses, to develop (through a program of tideland filling) new areas definitely planned to accommodate larger plants, and to provide all these with adequate rail, water and highway facilities.

It is not the purpose of this report to discuss in further detail the many important relationships between rail and highway transportation facilities and the pattern of land use. Obviously the plan for future land uses affects, and is affected by, the transportation net-work. Land uses establish the points of origin and destination of traffic, but it is equally true that provisions for or obstacles to free movement strongly stimulate or retard urban growth and development.

The need for a special type of subdivision with larger sites, less frequent streets, and provision for spur tracks may in some cases justify extensive re-assembly of land with the aid of the power of condemnation. Relatively small expenditures of public funds for this purpose might result in large investments of private capital, with consequent additions to the tax rolls.

It will also be important to make sure that access to industrial areas from the residential areas, by private automobile as well as by public conveyances, is made easy and direct. In this connection future activities at the Hunters Point Navy Yard, as a center of industrial employment, must be given careful consideration.



COMMERCE

Commercial uses shown in black.
Frontage zoned for commercial use shown by red lines in streets.

1 **PARALLEL LINES OF "SHOESTRING" BUSINESS DEVELOPMENT.**

2 **BUSINESS USES IN INDUSTRIAL DISTRICT** (Compare Plate 3)

3 **COMMERCIAL AMUSEMENT ZONE AT BEACH**

4 **"SHOESTRING" COMMERCIAL DISTRICT** in excess of needs, preventing more appropriate and profitable uses of valuable land.

LAND USED FOR COMMERCE

Census Tracts	Study Area	Total Acres	Acres Per Milcapita
A (1-15)	North Beach-Chinatown	104.7	1.51
A (16-23)	Down-Town	224.2	6.19
B	Marina-Pacific Heights	48.9	0.88
C	Presidio	-	-
D-H	Park-Presidio, East	27.1	1.22
F	Lincoln Park	-	-
E-G	Park-Presidio, West	39.4	0.96
I	Golden Gate Park	0.7	-
J (1-14)	Western Addition	121.9	1.68
J (15-20)	Buena Vista	39.9	1.07
K	South of Market	177.0	7.56
L	Potrero-Bay View	53.0	1.26
M	Visitacion-Excelsior	85.4	1.40
N (1-11)	Mission	108.6	1.94
N (12-15)	Noe-Glen Park	16.1	0.79
O (1-4)	Sunset-West Portal	26.2	0.82
O (5-9)	Ocean Avenue	20.8	0.79
P-Q	Sunset-Parkside	29.6	0.65
R	Merced	-	-
	Total for City	1123.5	1.75
	Stores with dwellings above	510.5	0.79

Land for Commerce

In measuring the land used for commercial purposes, the limitations of the data available have prevented accurate distinction between wholesale and retail areas, and permitted only a rough approximation of other desirable details. It is believed also that some of the enterprises classified as commercial by the WPA workers were really light industrial in character. Commercial recreation, such as theaters, and also hotels and apartment houses over stores are included in this category.

The commercial use as a whole is not extensive, constituting only 4% of the total land area, or about 1100 acres. Of this, 346 acres are concentrated in the southern portion of Census District A and in Census Tracts K-1 and K-2; that is, in the downtown business area of the city. (See Plate 4) The remainder, apart from certain concentrations along main highways to the South, is spread over the city in a pattern similar to that shown by the population. The amount in each study area and the variations in relation to the population, are shown in Table 8.

The Central Business District is a special type of commercial use, which is of particular importance here. The demand for commercial space in the down-town area depends upon (1) the services rendered to the metropolitan area, (2) the functions performed as a financial and trade center for the region as a whole, (3) the business transacted by visitors and tourists, in addition to the normal requirements of the population in the immediate vicinity. But the area of the central business district itself does not tend to increase directly in proportion to these demands, for to be convenient it must remain small enough for traversal by pedestrians. More intensive use of the land, with higher office buildings and many-storied stores and hotels is the characteristic result.

Studies of the areas of the central business districts of larger cities lend force to the assumption that this area will not increase in overall area in the future. There will probably always be room within it for every appropriate use and function including more extensive off-street space for automobile parking. Some minor uses not appropriate may eventually have to find space elsewhere but, in making the land use plan, the central business district should not be considered as increasing its area requirements in proportion to the population increases.

Local Business Uses are those which meet the everyday needs of the people in the immediate vicinity. An analysis of the acreage devoted to business uses other than that of a metropolitan character shows that the requirements for local business vary from 0.75 to 1.5 acres per thousand persons, averaging about 1.2 acres but running most often at about 0.8 of an acre in areas containing only neighborhood service establishments. The average is heightened by the localized sub-centers, such as are found on Fillmore Street, in the Marina and south on Mission Street.

In comparison with other cities, San Francisco uses less land per milcapita for local business purposes. Typical figures are, for example, 3.30 acres in the central part of the Los Angeles area, 2.5 acres in Cleveland, 2.15 acres in St. Louis and 3.50 acres in inner portion of Detroit. But a recent survey of 8 residence communities in the Bronx, Brooklyn and Queens gave 1.2 acres per thousand persons, a figure very like that found here. And it is to be remembered that the figure here is 1.75 acres if we include the down-town business section.

We may assume, however, that the local habit is to consume less (or perhaps to waste less) land for business purposes, a natural result of the less decentralized characteristics of the city as a whole. In the future, the modern tendency to provide off-street parking in connection with stores may have the effect of increasing the requirement. But it is also true that shrinkage of the ratio is a natural accompaniment of slower growth, with its reduction of competitive opportunity and speculative enterprises in new areas.

It seems safe to assume that the ratio will remain nearly the same as at present, and that future requirements may be estimated at 1.2 acres per thousand persons, plus what is needed for the metropolitan business center (1) In allowing for strictly neighborhood business, as in urban redevelopments or new subdivisions, from three-fourths to one acre per milcapita will probably be found ample. At 100-foot lot depths this corresponds to a range of from 33 to 45 feet of business frontage per 100 persons.

Commercial Zoning now applies to over 1600 acres. (Plate 4 shows in red the streets upon which the frontage is zoned for commercial use.) The amount used is just over 1100 acres. In each case nearly 350 acres is to be considered as the relatively fixed area of the central business district . The ratio of the remaining portions to one another is that of 1250 to 850, indicating a 50% over-supply. Thus the city's population would have to increase to well over a million before an amount of land equal to that so zoned would come into use.

This does not indicate as bad a condition of overzoning as is common in American cities. It demands attention, however, because of the limited amounts of land available for residence and other purposes. Many of the areas recorded as in commercial use are not zoned for such use, so that the problem is one of re-adjustment in the location as well as in the amount.

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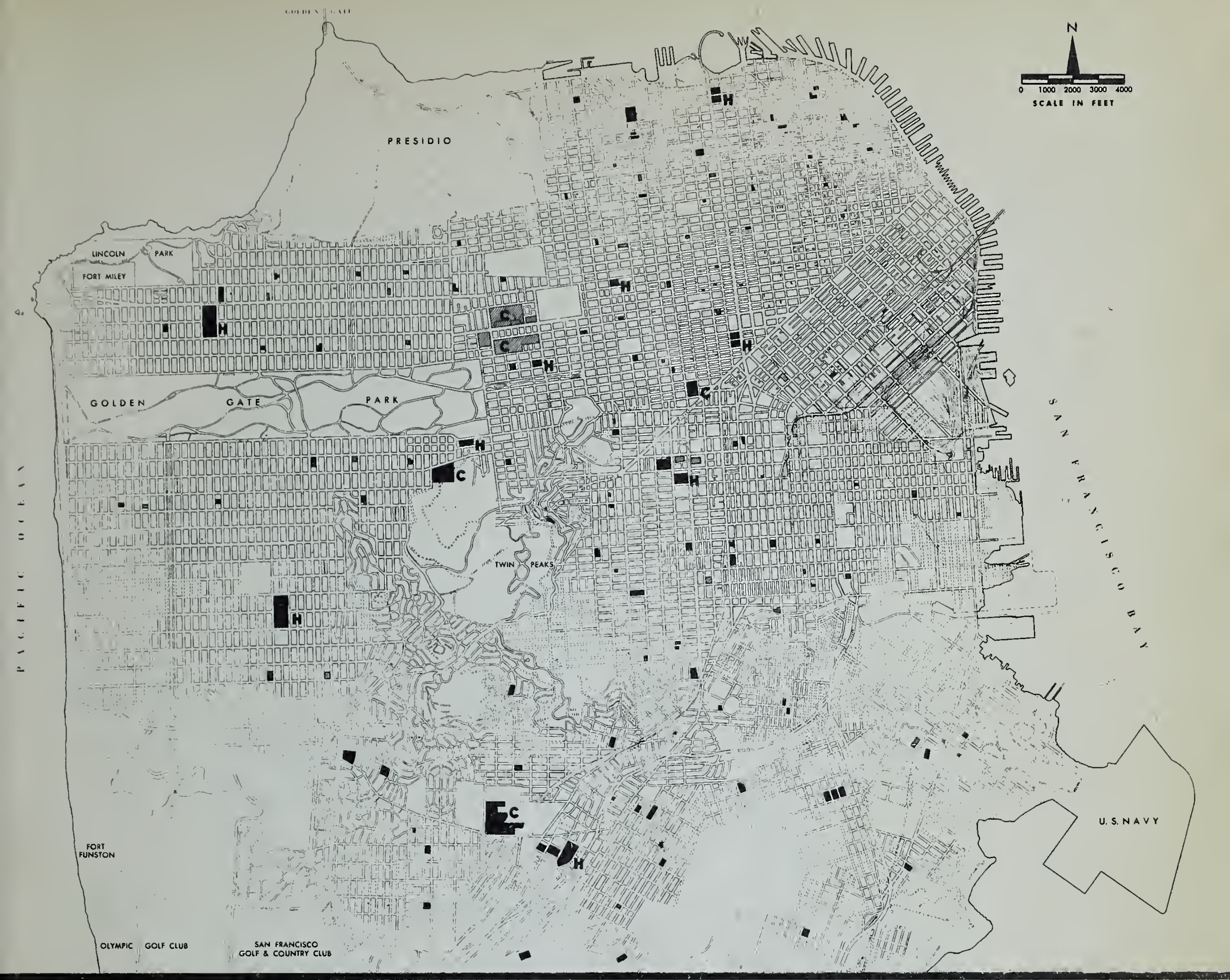
(1) These figures are for the net business area and do not include adjacent streets. The "local" business needs of the permanent population within the down-town area are not deducted, because they are approximately offset by non-local types of business done in outlying sections, as, for example, along Van Ness Ave.



SCHOOLS

Public schools shown in black

Parochial schools shaded

H *indicates High School*

C *indicates College or Normal School*

Note extremely small size of most of the school sites.

PLATE 5

LAND USED FOR SCHOOLS

Census Tracts	Study Area	Total Acres	Acres Per Milcapita
A (1-15)	North Beach-Chinatown	16.8	0.24
A (16-23)	Down-Town	1.8	0.05
B	Marina-Pacific Heights	16.8	0.30
C	Presidio	-	-
D-H	Park-Presidio, East	2.8	0.13
F	Lincoln Park	-	-
E-G	Park-Presidio, West	26.3	0.64
I	Golden Gate Park	-	-
J (1-14)	Western Addition	70.3 (1)	0.97(1)
J (15-20)	Buena Vista	14.3	0.38
K	South of Market	9.0	0.38
L	Potrero-Bay View	15.8	0.38
M	Visitacion-Excelsior	23.5	0.39
N (1-11)	Mission	28.6	0.51
N (12-15)	Noe-Glen Park	7.6	0.37
O (1-4)	Sunset-West Portal	15.4	0.48
O (5-9)	Ocean Avenue	55.4 (2)	2.11(2)
P-Q	Sunset-Parkside	25.7	0.57
R	Merced	-	-
Total for City		330.1	0.51
Public:		248.8	0.39
Private:		81.3	0.12

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(1) Private schools, 52.6 acres; ratio for public schools, 0.24
(2) S.F. Junior College, 41.3 acres; ratio for other schools, 0.54

Land for Schools

Because of its social and cultural significance, the land used for schools is not included with the general group of institutional and public building uses, but is shown separately in Table 9. Only a little over half a square mile (330 acres) is utilized for all the schools in San Francisco. Of this, nearly a fourth is taken by private and parochial schools, so that the public schools occupy only 249 acres or less than 0.4 of an acre per milcapita.

School site areas, segregated by type of school, are given in Table 9A. Our 9 High School sites are seen to have an average area 7.6 acres each, but 4 of them have less than 5 acres, one as little as 2.2 acres. Only the two new High Schools (Washington and Lincoln) have adequate sites, over 15 acres. The existing average allows an acre of ground for each 300 public high school pupils, for buildings, planting, playground and all. As to Junior High Schools, the average site area is just over 3 acres, with an acre for each 323 pupils. These sites are clearly inadequate.

But the need for more space is most evident in connection with the grade schools. These differ widely in enrollment and vary as to the number of grades included, but the average figures are nevertheless striking. There were in 1940 seventy-five such schools, with an average attendance of 475 pupils, and the land used amounted to 1.3 acres for each. That is an acre for each 368 children, which amounts to only 118 square feet per child for both building and playground.

TABLE 9A

SCHOOL SITE AREAS

Type of Schools	No.	Acres	Average Site Area	Average No. Pupils	Pupils Per Acre
State Normal	1	5.7	5.7	(1940)	-
Jr. College (Public)	1	41.3	41.3	2255	55
Public High	9	68.4	7.6	2260 (1)	297
Continuation & Trade	2	2.1	1.0	--	-
Jr. High (Public)	11	34.6	3.1	1019	323
Elementary (Public)	75	96.7	1.3	475	368
All Public		248.8			
Private & Parochial		81.3			
Total		330.1			212

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(1) Based on 8 schools; Lincoln High School not in use, 1940

An analysis of playground areas at all schools indicates that about 85 acres of the total land is set aside for playgrounds. It may therefore be roughly estimated that for some 70,000 public school children in all, the average play area at schools amounts to about 53 square feet per child, a figure to be compared with the National Recreation Association standard of 100 square feet per child.

San Francisco is rightly proud of its modern schools and progressive educational system. No criticism of these is implied in pointing out inadequacies in building sites (especially in the case of the older schools) which our educators would be the first to admit.

While all the above figures are roughly calculated, and represent conditions of several years ago, they are indicative of a serious situation. It is not within the scope of the present report to analyze it in any detail, or to go beyond an estimate of its broad bearing on the future distribution of land uses.

The location and distribution of school sites is shown on Plate 4, where parochial school sites are shown by shading, and public school sites in solid black. The extremely small size of some of the sites is apparent.

Even after allowance is made for the intensive use of land characteristic of San Francisco, this meager allotment of sites for public schools deserves critical attention. It is true that the proportion of school-age children here to the total population is low and steadily declining, but not to an extent that would affect this situation.

It is recognized that the utilization of the existing school plant, the limited amount of land available in certain areas, and the economics of the situation make it unlikely that the ratio of land for schools can be changed much during the next few decades. But all new development should of course represent a progressive policy, and if fully up to nationally accepted standards, they will tend to improve the average somewhat.

It does not appear unreasonable, therefore, to expect that in the future the proportion of land for all school sites will approach 0.6 acre per milcapita, an increase of 20% over the present ratio.

LAND USED FOR INSTITUTIONS

Census Tracts	Study Area	Total Acres	Acres Per Milcapita
A (1-15)	North Beach - Chinatown	13.9	0.20
A (16-23)	Down-Town	25.0	0.69
B	Marina-Pacific Heights	14.8	0.26
C	Presidio	-	-
D-H	Park-Presidio, East	16.3	0.73
F	Lincoln Park	-	-
E-G	Park-Presidio, West	5.1	0.13
I	Golden Gate Park	-	-
J (1-14)	Western Addition	34.4	0.47
J (15-20)	Buena Vista	18.8	0.50
K	South of Market	15.2	0.65
L	Potrero-Bay View	38.2	0.91
M	Visitacion-Excelsior	44.8	0.74
N (1-11)	Mission	18.4	0.33
N (12-15)	Noe-Glen Park	1.6	0.08
O (1-4)	Sunset-West Portal	131.6 (2)	4.10(3)
O (5-9)	Ocean Avenue	19.1	0.73
P-Q	Sunset-Parkside	18.4	.41
R	Merced	-	-
	Total for City (1)	415.6	0.65
	Public:	194.8	0.30
	Private:	220.8	0.35

---

(1) Does not include schools. (See Table 9)
(2) Includes Laguna Honda Home for the Aged, 110.5 acres.
(3) Ratio 0.66, exclusive of Laguna Honda Home

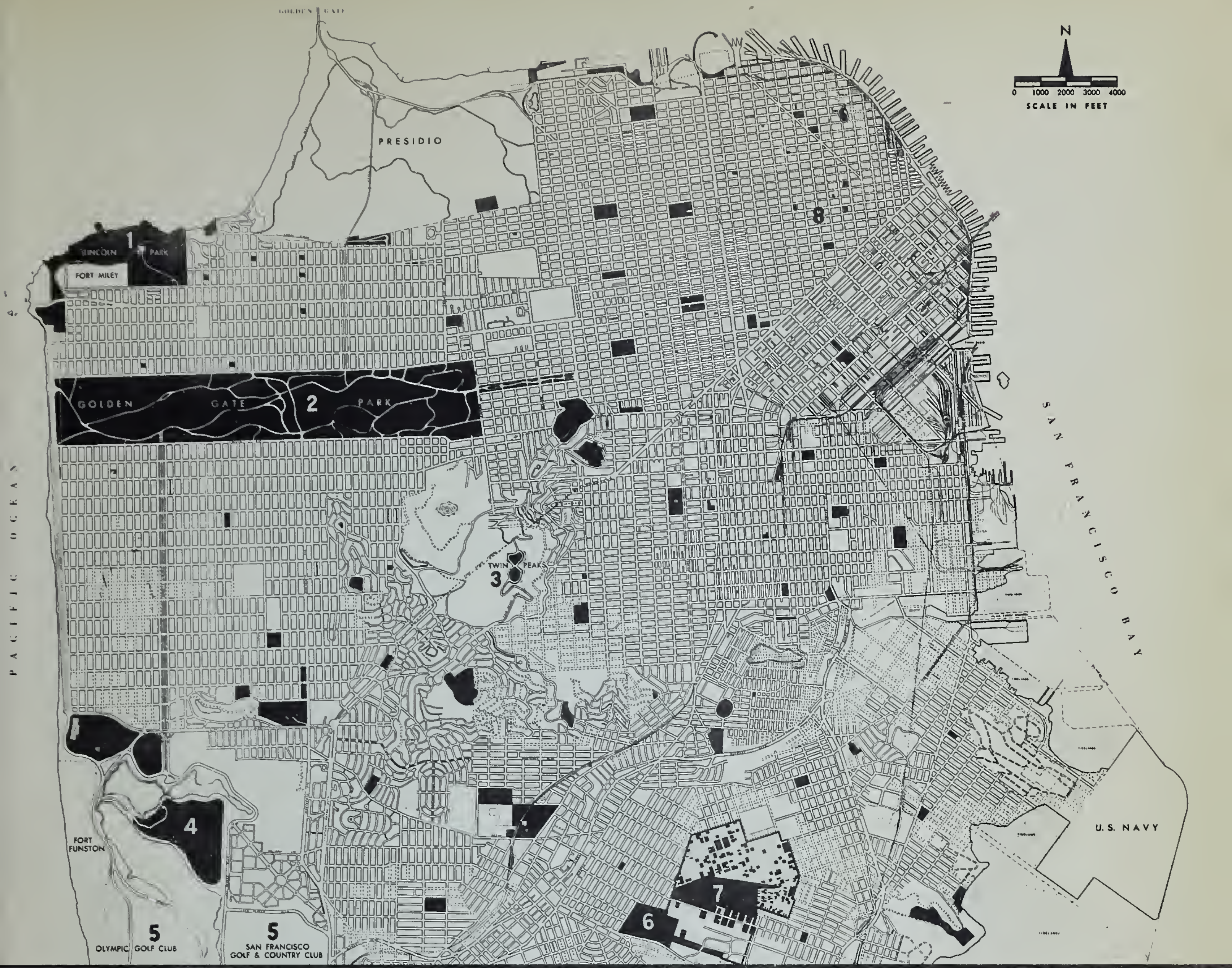
Land for Institutions

All public and private institutions (other than schools) are included in this category of land uses. Often loosely referred to as "public and semi-public buildings", they are more accurately and distinctively named here. The use includes religious, charitable, cultural, health, governmental and protective institutions, as well as establishments of a social character (such as club buildings) when these are of community significance.

The necessity of allowing space for these in estimates of future distribution of land uses is often overlooked. Taken together, these churches, hospitals, libraries, museums, fire stations, government offices, and so on, take up about 416 acres, distributed as shown in Table 10. This amounts to about .65 of an acre for every 1000 persons, which is 26% more than is used here for all schools, public and private. Well over half of these are private institutions, and represent the meeting of a demand that is inherent in the social and cultural life of the community.

Over half of the total of 195 acres used for public institutions is to be found in the site of the Laguna Honda Home for the Aged (110 acres). Of the remainder, 21.5 acres are for the San Francisco General Hospital, and 13.8 acres for the Civic Center. Fire stations occupied about 12 acres, police stations about 5 acres, branch libraries about 4 acres, and various City, State and Federal buildings the remaining 28 acres. Of the private institutions, churches make up about 80 acres, hospitals and charitable institutions about 80 acres, social and cultural institutions about 60 acres. The distribution of these smaller institutions is fairly even throughout the city, in proportion to the population.

It may be assumed in considering future needs that allowance in about the same proportion as that now found will be a satisfactory minimum. For if some of these facilities appear to be duplicated or ineffectively used, it is also true that others are clearly inadequate as to site area and distribution.



RECREATION

Public parks and recreation areas shown in black.
School playgrounds not shown.

1 **LINCOLN PARK**

2 **GOLDEN GATE PARK**

3 **TWIN PEAKS**

4 **HARDING GOLF COURSE**

5 **PRIVATE GOLF CLUBS**

6 **CROCKER AMAZON PLAYGROUND**

7 **SITE OF JOHN McLAREN PARK** (As proposed at the time of the survey. Acquired portions and boundary as proposed at the time of survey, shown in black.)

8 **HEAVILY POPULATED AREA WITH FEW PARKS**

PLATE 6

TABLE 11

LAND USED FOR RECREATION

Census Tracts	Study Area	Total Acres	Acres Per Milcapita
A (1-15)	North Beach-Chinatown	46.3	0.67
A (16-23)	Down-Town	9.9	0.27
B	Marina-Pacific Heights	102.8	1.84
C	Presidio	6.0	1.35
D-H	Park-Presidio, East	23.9	
F	Lincoln Park	184.1	(1)
E-G	Park-Presidio, West	82.9	2.03
I	Golden Gate Park	1040.4	(1)
J (1-14)	Western Addition	41.3	0.57
J (15-20)	Buena Vista	58.7	1.57
K	South of Market	22.1	0.95
L	Potrero-Bay View	65.4	1.56
M	Visitacion-Excelsior	151.4 (2)	2.50
N (1-11)	Mission	18.8	0.34
N (12-15)	Noe-Glen Park	21.4	1.05
O (1-4)	Sunset-West Portal	31.5	0.98
O (5-9)	Ocean Avenue	75.4	2.87
P-Q	Sunset-Parkside	101.2	2.23
R	Merced	560.7 (3)	(1)
	Total for City (4)	2864.5	4.47
	Public:	2508.8	3.92
	Private:	355.7	.55

---

(1) Not computed - serving entire city.
(2) Does not include 220.3 acres acquired but not developed, McLaren Pk.
(3) Includes 315.6 acres, private country clubs.
(4) Parks and playgrounds (except at school sites); includes McLaren Park.

Recreation

In Table 11, the amount and distribution of land used for recreational purposes is given. This includes formal parks as well as playgrounds, and also privately owned uses, where so operated as to be of community significance. Public parks and playgrounds only are shown in black on Plate 6.

The city average of about 4.5 acres per milcapita is reduced to 3.9 acres, if privately owned areas, such as the golf and country clubs, are omitted. No distinction was made in the table between the large parks serving the whole city and those serving only the neighborhood, except in the three cases noted (Census Districts, F, I and R).

Among these large areas are the world-renowned Golden Gate Park, reaching from the Pacific shore almost to the heart of the City, and scenic Lincoln Park surrounding Fort Miley in the northwest corner of the city, and the proposed McLaren Park in the hills to the South.

These are supplemented by the open spaces provided on three sides of San Francisco by the waters of the Pacific, the Golden Gate and the Bay. To the South also, San Bruno Mountains form a natural open space. These form an important part of the natural recreational resources of the site, and preserve a feeling of spaciousness that is a priceless asset. Within the city, too, are heights which are still open and unspoiled.

Another unusual feature, of some recreational importance is the location within the City of 4 great Military Reservations. There are 1464 acres in the Presidio, 119 acres in Fort Miley and Fort Mason on the North shore and 248 acres in Fort Funston, at the southwestern corner of the City. These permanent open spaces, largely accessible to the public except in time of war, have assured the perpetuation of the natural landscape at points of special interest.

When to all these we add the Ocean beach along the Great Highway, the large golf links in the Merced area, and the permanent open spaces of the water lands at Laguna de la Merced, provision for what are known as regional or "district" parks is seen to be well above average. (See Plate 6). This is especially true when the accessibility, over the two great bridges, of all the scenic and recreational splendors of Marin and the East Bay Region is taken into account. Nor can we forget the great esplanade along the Pacific, the yacht harbor at the Marina, or the many resorts in the hills down the Peninsula, and toward Santa Cruz.

But when attention is turned to the smaller parks, and to provision for playgrounds in the densely occupied portions of the City, the situation is far from being satisfactory. For thse amount in all to only 1.33 acres per milcapita, scarcely half the normal provision as recommended by recreation authorities. Furthermore the distribution is such as to provide these spaces least generously where

they are needed most, with from one-seventh to one acre or less per milcapita in Census Districts A(16-23) (Downtown), J(1-14) (Western Addition), K (So. of Market), N(1-11) (Mission). These Districts have only 2% of their total area in parks and playgrounds. Over one-third of the people of San Francisco dwell within these areas, and the vast majority of visitors to the City sojourn there, but they contain less than 100 acres of open space in all, including the Civic Center Plaza.

With full recognition of the high land values which prevail, and of the difficulty of obtaining land for recreation or formal parks in such congested areas, it may be said nevertheless that the securing of more such spaces must be included among the long-term objectives of the Master Plan. Even in outlying districts, both school playgrounds and other play areas are deficient in some neighborhoods, and as they fill up, some of the now vacant spaces will need to be selected and acquired for such uses, to avoid more costly procedures later.

In Comparison With Other Cities, San Francisco stands well near the top of the list, both as to acres of public parks and recreation space, and as to the proportion of the whole set aside for these uses. The figures in Table 11, except those for San Francisco and Detroit, are taken from the sources indicated, and represent conditions in 1940. The Detroit figures are from a recent survey of land uses there, the local figures from the present survey.

TABLE 12

PUBLIC PARK & RECREATION AREAS

11 Cities Compared - 1940

City	(1) Acres per 1000 Persons		(2) % of Gross Area
Boston	4.8	(3)	13.5
Cleveland	4.4		8.3
Philadelphia	4.3		9.8
San Francisco	4.0		8.9
Los Angeles	3.9		2.1
St. Louis	3.8		8.3
Pittsburgh	3.2		6.1
Buffalo	3.1	(3)	9.2
New York	3.0		11.6
Chicago	2.2		5.0
Detroit	1.7		4.4

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(1) "Municipal & County Parks in the United States" - 1940
(2) Regional Plan Bulletin, N.Y. - 1941
(3) Includes acreage outside city limits

TABLE 13

LAND USED FOR UTILITIES (1)

Census Tracts	Study Area	Total Acres	Acres Per Milcapita
A (1-15)	North Beach-Chinatown	11.7	0.17
A (16-23)	Down-Town	0.3	0.01
B	Marina-Pacific Heights	0.4	0.01
C	Presidio	-	-
D-H	Park-Presidio, East	0.2	0.01
F	Lincoln Park	-	-
E-G	Park-Presidio, West	3.6	0.09
I	Golden Gate Park	-	-
J (1-14)	Western Addition	8.6	0.12
J (15-20)	Buena Vista	1.6	0.04
K	South of Market	26.7	1.14
L	Potrero-Bay View	5.9	0.14
M	Visitacion-Excelsior	45.9	0.76
N (1-11)	Mission	17.4	0.31
N (12-15)	Noe-Glen Park	0.5	0.02
O (1-4)	Sunset-West Portal	98.7	3.07
O (5-9)	Ocean Avenue	4.7	0.18
P-Q	Sunset-Parkside	41.3	0.91
R	Merced	5.6 (2)	-
	Total for City	273.1	0.43
	Public:	252.9	0.40
	Private:	20.2	0.03

---

(1) This term includes water power and fuel supply, sanitation, port facilities, broadcasting stations, bus terminals, etc.

(2) Lake Merced and adjacent water lands (587.0 acres) excluded as not comparable to the urban uses in this category.

Land Used for Utilities

In many surveys of land use, the phrase "public utilities" has been used to cover certain essential urban land uses such as sewage disposal plants, gas plants and waterworks. Here, the utility uses summarized in Table 13 also include car-barns, telephone exchanges, bus terminals, (1) port facilities and other lands characterized by the utilitarian character of their function, whether publicly owned or not.

In theory, the acreage of water lands including and surrounding Laguna de la Merced might have been included here. But consideration of its appearance, its partial use for recreation, and its overshadowing acreage when compared to other uses has suggested an exception of these 587 acres, which are not included in the table. This area is also shown separately in Table 1 (Extent of Public Ownership) in order not to distort the percentages given there. In Table 2 it is included with utilities. Strictly speaking it is not an "urban" use of property, but is more correctly associated with rural use, along with the more remote parts of the city's water lands.

The remainder of this type of use is seen to be of minor importance - but not negligible. It must be allowed for in any future distribution at a city-wide ratio of something under one-half acre per milcapita, with lessening ratio as the population increases, because the larger items in this category, once established, do not have to be increased as population grows.

Streets, in a sense, come under this category, but are of such importance as to be treated separately. The land used for streets (7,244 acres) forms an exception to the principle of measuring land by its relation to the population. The requirement for streets depends upon the total amount of land used for other purposes, and upon the usage prevalent as to block layouts. Throughout most of San Francisco it forms quite uniformly between 29% and 33% of the area developed for urban use. In the areas bordering on the Embarcadero it runs slightly higher, and the city-wide average is reduced to 27.4% by the inclusion of the large parks and the unsubdivided areas in the south and southwest portions, as shown on the following page in Table 14. The proportion of local streets may be reduced considerably by more careful design in areas developed in the future, but such reductions may be offset by the additional land needed for the main traffic arteries.

Railroad lands, too, are a utilitarian use, but because of the close association with industrial uses, they have been included in Table 7, and are discussed in the text which follows that table (see page 18).

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(1) Air terminals are also utilities, but do not appear in these figures, as the San Francisco Airport is south of the city limits.

AREA AND PERCENTAGE OF STREETS

Census Tracts	Study Area	Acres	Percentage(1)
A (1-15)	North Beach-Chinatown	354.4	35.9
A (16-23)	Down-Town	212.1	39.0
B	Marina-Pacific Heights	377.5	32.7
C	Presidio	-	-
D-H	Park-Presidio, East	160.5	33.3
F	Lincoln Park	0.1	-
E-G	Park-Presidio, West	432.2	33.5
I	Golden Gate Park	60.8	5.5
J (1-14)	Western Addition	421.7	31.5
J (15-20)	Buena Vista	197.7	30.4
K	South of Market	496.4	31.4
L	Potrero-Bay View	917.3	27.6
M	Visitacion-Excelsior	997.9	28.4
N (1-11)	Mission	434.3	33.4
N (12-15)	Noe-Glen Park	262.7	30.4
O (1-4)	Sunset-West Portal	387.4	21.8(2)
O (5-9)	Ocean Avenue	565.7	28.8
P-Q	Sunset-Parkside	826.3	27.9
R	Merced	139.3	10.2 (3)
	Total for City	7244.3	27.4

---

(1) Based on total area, except military and naval reservations
(2) Excluding O-1, this would be 31.3%
(3) Largely unsubdivided

IV. THE LAND WE LIVE ON

Residence Land

Finally we come to a consideration of the land used for residence - the space for dwellings and the private grounds about them. In one sense, of course, this is the most important of all the uses. Yet the space for the business and industrial activities upon whose prosperity the very existence of the city as a metropolis depends must, in another sense, be the first concern. The fact is that neither can do well without the other, and common sense demands that equal attention be given to adequate space provision for homes and for work, as well as for convenient movement between the two.

Unfortunately, when space is limited, and undue competition takes place, the individual homeowner may be at a great economic disadvantage. He must buy (or rent) what is available, in a seller's market, for the most part. As an individual he cannot prevent neglect or misuse of adjacent property. He is dependent upon transit and highway facilities, and cannot select freely from undeveloped portions of the urban area until after they are made accessible and subdivided.

Thus although thousands of acres are vacant or but thinly developed, all the residences in San Francisco are crowded together on less than 7400 acres (11.5 square miles). This includes over 500 acres where the apartments are over stores or over other commercial uses (see Tables 2 and 16). Thus the city-wide average of net land area per dwelling unit is about 1440 square feet. (1)

Actually of course the residential land is not divided equally among family units. One-third of them, in single-family dwellings, occupy about two-thirds of the residential area. A fourth of all dwelling units are in large apartment buildings which occupy less than 8% of the total residential area.

In some parts of the city, densities as high as 725 persons per acre (2) are found in single blocks, and blocks with densities of over 200 are not infrequent. In other parts, large numbers of lots are entirely unoccupied, chiefly because of the inadequacy of transportation lines, the deficiencies of the local street system as related to the topography, or the existence nearby of sub-standard houses whose presence discourages new development.

The areas used for single-family dwellings, and those used for multiple dwellings of the various types will be considered separately. Table 15, which follows, shows the amount and distribution of the former.

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(1) Full use of vacant areas, even allowing 20% better provision for occupational and cultural uses, would have made it possible to raise this average by 50% with the same population.

(2) See Appendix C.

LAND USED - SINGLE FAMILY DWELLINGS

Census Tracts	Study Area	Total Acres	Acres Per Milcapita.
A (1-15)	North Beach-Chinatown	52.8	0.76
A (16-23)	Down-Town	0.4	0.01
B	Marina-Pacific Heights	265.2	4.74
C	Presidio	-	-
D-H	Park-Presidio, East	130.7	5.88
F	Lincoln Park	-	-
E-G	Park-Presidio, West	466.1	11.42
I	Golden Gate Park	-	-
J (1-14)	Western Addition	134.1	1.85
J (15-20)	Buena Vista	99.0	2.64
K	South of Market	15.5	0.66
L	Potrero-Bay View	431.1	10.29
M	Visitacion-Excelsior	837.2	13.79
N (1-11)	Mission	240.3	4.29
N (12-15)	Noe-Glen Park	201.0	9.90
O (1-4)	Sunset-West Portal	470.1	14.64
O (5-9)	Ocean Avenue	606.5	23.06
P-Q	Sunset-Parkside	877.6 (1)	19.37
R	Merced	-	-
	Total for City	4827.6	7.53

---

(1) Does not include the Parkmerced development, which was vacant at the time of survey.

Single-Family Dwellings

The number of single-family dwellings at the time of survey was estimated to be 77,500 of which about 31% were detached, the remainder being row-houses. The two types occupied about 4800 acres. No distinction was made between them in the measurement of areas, but if an average lot size of 3600 square feet be assumed for the detached dwellings, they would occupy about 2000 acres. Under this assumption, the row-houses would have an average site area of 2300 square feet, occupying 2800 acres.

Table 15 shows that over half (54%) of the single residence area is west of the Twin Peaks, in Census Districts D, E, G, H, O, P and Q which contain 25% of the population. But this type of dwelling is scattered throughout the city (except in the down-town area), and in spite of the recent extensive rezoning in the Sunset-Parkside District, still occupies much space in areas zoned for multiple dwellings. Some of these ought to be given protection by more appropriate regulation.

In some places the number of row houses per acre approaches a density equal to that of small apartment developments. The point at which the advantages of the single dwelling are thus reduced so far as to make preferable a well-designed multi-family dwelling, with better arrangement of open spaces, needs to be determined, and considered in revising the plan and density regulations.

In the survey an endeavor was made to check separately the amounts of land used for two-family dwellings, small apartments, and larger multi-story apartments. The available data did not permit more than an approximation, but the total figures obtained were in fair correspondence with census data as to the numbers of dwellings of the various types, as shown in Table 16. The resulting figures as to units per acre are not exact, because of the estimates involved, but indicate that the general distribution may be taken as correct.

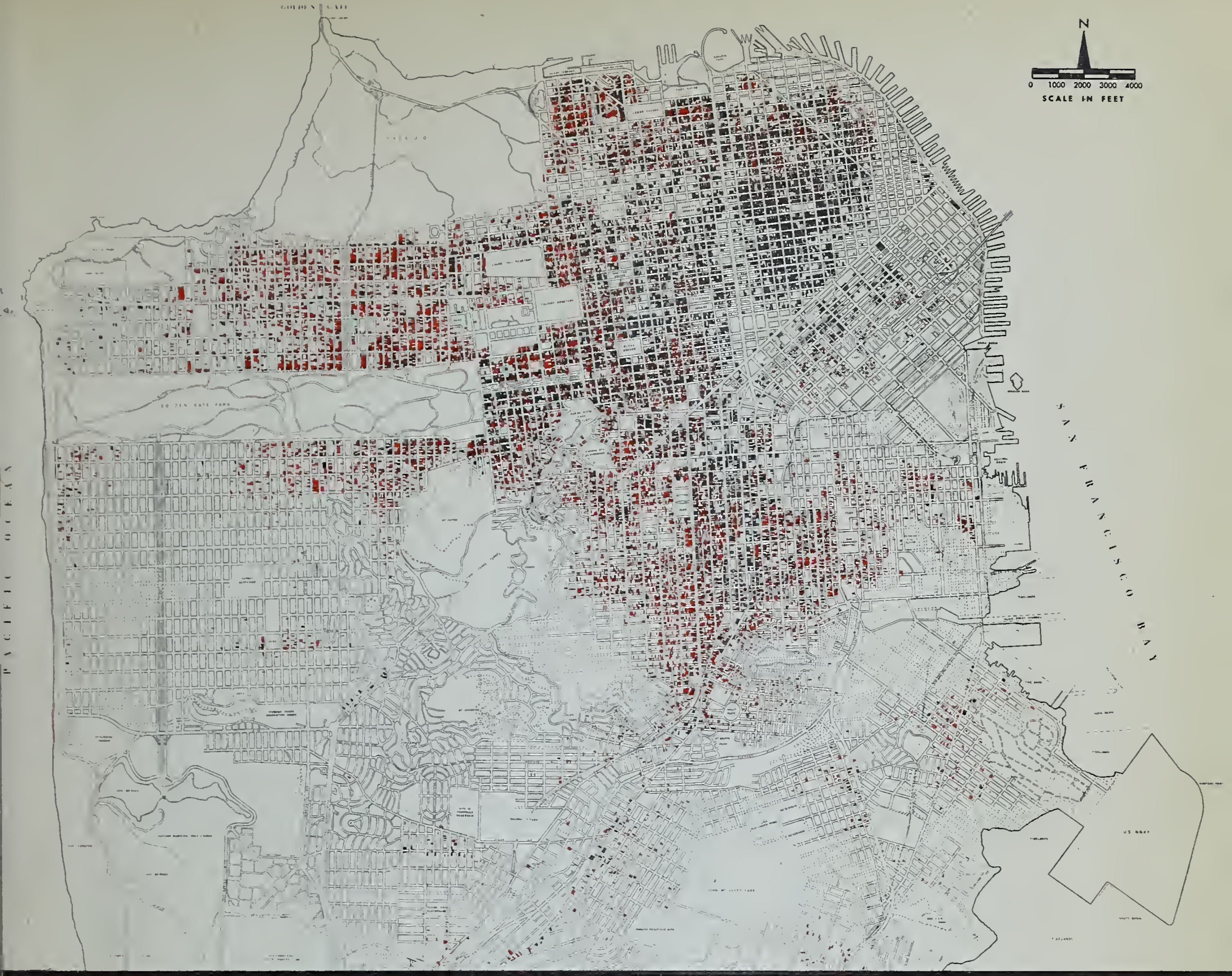
TABLE 16

DWELLING UNITS BY TYPE

Type of Dwelling	No. of Units	Acres Used	Units per Acre	% of Population
Single Family	77,500(1)	4828	16	41.0
2-Family	30,240	1105	27	15.0
Small Apartments	35,600(2)	522 (3)	68	15.6
Large Apartments	42,800(4)	428 (3)	100	16.7
Over Commercial (all types)	37,763(4)	510	75	11.8
	223,903	7393	30	100.0

---

(1) Increased over 1940 Census figures to allow for new development.
(2) Including Census figures up to half the 5-9 family group.
(3) Distribution estimated from survey totals.
(4) Distribution estimated from census totals.



MULTIPLE DWELLINGS

Areas used for two-family dwellings shown in red

Areas used for other multiple dwellings shown in black

(Compare with Plate 4, page 22, to identify areas used for residence over commercial uses.)

1. **SOUTHWEST QUARTER OF CITY, ALMOST ENTIRELY FREE OF MULTIPLE DWELLINGS.**
2. **INDUSTRIAL DISTRICTS CONTAINING MANY SUBSTANDARD RESIDENTIAL STRUCTURES.**

PLATE 7

TABLE 17

LAND USED FOR MULTIPLE RESIDENCE

	ACRES			ACRES PER MILCAPITA	
Census (1) Tracts	2-Fam. Dwlgs.	Ap'tm'ts. (3 or More)	Dwlgs. over Commercial	Residence Only	Including Commercial
A (1-15)	50.2	170.7	56.5	3.18	4.01
A (16-23)	-	29.5	65.3	0.82	2.64
B	120.1	147.6	23.6	4.79	5.21
C	-	-	-	-	-
D-H	80.3	29.4	15.2	4.94	5.63
F	-	-	-	-	-
E-G	91.1	33.6	12.2	3.05	3.35
I	-	-	0.5	-	-
J (1-14)	116.9	201.3	46.6	4.38	5.03
J (15-20)	82.5	97.6	13.7	4.81	5.18
K	15.9	29.7	20.4	1.95	2.82
L	133.9	31.7	28.8	3.95	4.64
M	93.9	14.4	41.6	1.78	2.47
N (1-11)	124.5	117.5	48.3	4.32	5.18
N (12-15)	68.5	20.8	14.1	4.39	5.09
O (1-4)	48.8	20.0	9.6	2.14	2.44
O (5-9)	52.7	1.2	7.5	2.05	2.34
P-Q	26.2	4.6	6.6	0.68	0.83
R	-	-	-	-	-
Totals	1105.5	949.6	510.5	3.21	4.01

---

(1) See Table 15 for names of study areas.

Two-Family Dwellings

The estimate of areas used for two-family dwellings is shown by Study Areas in Table 17, but the other types are not segregated. Their distribution is shown superimposed in red on Plate 7. In a few areas it is a predominant type, as in parts of the Marina and in the Park-Presidio District. Its relative proportion is higher in the older portions of the city. The acreage devoted to 2-family dwellings is almost as great as that for other types of multiples combined, even when dwellings over commercial uses are included. It thus constitutes an important use, providing for nearly 100,000 persons. The zoning ordinance, however, makes no distinction at present between these and other much larger multiple dwellings. This type of use is therefore scattered and uncontrolled as to lot sizes.

Account must be taken of the difference in appeal between these duplex dwellings and the row type of single-dwellings, where every home may be owned by the occupant. About 3/5 of the row houses are owner occupied, but nearly 3/4 of all the units in duplex dwellings are tenant occupied, so that only half of the owners of duplexes live in their own buildings. The average net density tends to be about 40% greater than in row houses, at about 87 persons per acre.

Multiple Dwellings

As to multiple dwellings with 3 or more families, and dwellings over commercial uses, Table 16 shows that they accommodate about 44% of the total population, upon a net area only slightly over 2 square miles. On Plate 7, those which are over commercial uses are included.

In Table 17, the areas are shown separately and the ratios to population are given for multiple residence land only, as well as for the land which is also used (on the ground floor) for commerce. The low figures for the down-town and south of Market areas are indicative of the high residential densities prevailing in the multiple residences there. These areas contain numerous residence hotels. Nearly two-thirds of the area used for all types of multiple dwellings is found within Census Districts A, B, J and N.

While residence uses are always permitted in any commercial zone, there is a need for a type of zoning which allows multiple residence, plus certain closely associated business uses only, so as to avoid the pressure to create a general commercial zone. In other areas, apartment houses operating without external business uses form a characteristic type of neighborhood which should be protected. A single classification in the ordinance for all types of multiple dwellings is unsatisfactory in ways additional to that just mentioned. A tall apartment placed in the middle of a group of four-family dwellings may be just as harmful to neighborhood values as a store building. A more uniform and stable type of development would result if a series of graduated requirements as to maximum lot coverage, height, and rooms per acre could be established.

V. LAND USES IN THE FUTURE

Application of the Data

The facts as to present use of land which have been briefly summarized represent a beginning only. They will have to be supplemented by more detailed studies, especially in problem areas, and kept up-to-date by field checks in areas where changes are occurring. They are sufficient, however, to form the basis for some important conclusions. Certain relationships between population and the distribution of land, the quantity and location of vacant land, and the location of uses with relation to one another, are indicators of future land use patterns.

Some present uses must obviously remain in their present locations, because of custom, costly improvements, natural suitability, or even for sentimental reasons. There are occupational and industrial trends and changes in the habits and other characteristics of the population, which must be analyzed and taken into account. But there are also many deficiencies and mal-adjustments which can be corrected by appropriate action once the purpose and full value of land use regulations are understood.

It is proposed here only to examine the probable ranges of residential density, as affected by (1) the total population assumed to occupy the City and County, (2) the continuance of present ratios of business and industrial uses, and (3) the correction of the most obvious of these deficiencies, as in the school and recreational areas.

Supply of Land Limited

In the Bay Region as a whole, population growth has been accompanied by an increase in the total urban area. New towns have grown up, and the older towns have expanded their developed area. Within the City and County of San Francisco, too, expansion of the developed area has accompanied population growth. But the number of persons who live within its fixed limits cannot increase indefinitely without exhausting all remaining vacant land, and creating new and more objectionable crowding in certain residential areas.

Omitting the military and naval reservations, and the area used for streets, we have found that within the City all urban uses, taken together, occupied 13,979 acres. The vacant land amounted to 5172 acres, making a net total of 19,151 acres. From this about 5% may be deducted as unusable because of topography and for other reasons, leaving for urban purposes within the City about 18,200 acres.

[illegible]

Analysis of the Plan

The plan [illegible] safety [illegible]

[illegible] land use patterns.

These proposals [illegible]

It is proposed [illegible] (1) [illegible] (2) [illegible] (3) [illegible] areas.

[illegible]

In the development of [illegible]

Omitting the [illegible]

Estimated Requirements - Non-Residence Uses

Certain uses, relatively independent of population changes, may next be set aside. These are, approximately, as follows:

Central Business Districts	346	acres
Railroad Lands	338	"
Large Public Utility Uses	100	"
Large Institutions (Home for Aged)	110	"
Large Parks	1700	"

This leaves an area of only 15,600 acres to provide for all other urban uses, which will in a sense be competing for it. Clearly we cannot have (1) high area standards for schools, recreation and open space (as well as normal absorption of land for business and industry,) (2) low population density in residential areas, together with (3) continuing increases in population. The desirability of the first two features must be accepted. If they are, the actual population capacity of the city area is seen to be limited.

In an examination of the "budgeting" of these 15,600 acres whose uses may be expected to vary with the population, it is necessary to begin with the variable non-residential uses. The ratios between land for these uses and population are based upon the observations made in the survey and in the text of this report dealing with each. In each case the present ratio is either assumed to continue substantially, or a new ratio, not ideal or widely different, is established to allow for observed trends or for the effect of a determined policy toward betterment (as in the case of school sites and playgrounds).

		Acres Per Milcapita	
Use	Remarks	High	Low
Commerce	Except Central Business District	1.25	1.15
Industry	Now requires 1.8 acres, but the trend is toward larger sites, and more industrial employment	2.00	1.80
Utilities	Except Lake Merced lands	0.35	.25
Institutions	Except Laguna Honda Home	0.55	.45
Recreation & Parks	Except large parks. Increased from present ratio of 1.33	2.50	2.00
Schools	Increased 20% over present ratio	0.60	0.60
		7.25	6.25

The total for these non-residential uses now averages about 5 acres for each 1000 persons. The summary above indicates that it might be increased to 7.25 acres per milcapita. A gradual decrease of this estimate to 6.25 acres because of the greater difficulty of securing the improvements is suggested for the higher assumed populations.

TABLE 18

EFFECT ON RESIDENCE LAND

Assumed Population	Required to Provide For Non-Residence Use		Remainder - Available For Residence Uses(1)	
	Acres per Milcapita	Total Acres	Total Acres	Acres per Milcapita
500,000	7.25	3625	11975	23.95
600,000	7.05	4230	11370	18.95
700,000	6.85	4795	10805	15.43
800,000	6.65	5320	10280	12.85
900,000	6.45	5805	9795	10.88
1,000,000	6.25	6250	9350	9.35

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(1) Does not include residence over commercial uses

The right hand column shows how rapidly the residence area available for each 1000 persons tends to diminish as the number of persons living within the city limits increases. Up to the present time, only about 7000 acres have actually been used for residence, for in the past the lack of development, difficulty of access and slower means of individual transportation have in effect limited the occupied area. This type of pressure toward higher densities is no longer essential.

It is clear that if the 8 square miles of land now vacant were used, residences might occupy over 10,000 acres instead of less than 7,000 acres, so that considerably lower densities might prevail with the present population. In what follows it is assumed for illustration that all the land is used.(1) The conclusions drawn are emphasized by the probability that this may never be.

Even with full use of all the land, the average density on residential land for populations between half a million and a million would fall between 40 and 100 persons per net acre. This fact alone throws much light upon further residential development in San Francisco, and permits a realistic approach to a sound future land use pattern.

It shows that the detached single family dwelling can not be the normal and prevalent type in this central portion of the Bay Region Metropolitan Area. To provide such houses for only 300,000 persons would require (at 30 persons per acre) about 10,000 acres. This would leave only a few hundred acres for all the rest.

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(1) The term "used" includes, of course, recreational, park and other non-residence uses, in proportion.

To be practical, therefore, the density pattern must be based upon the understanding that in San Francisco the multiple dwelling will continue to house a large proportion of the people, and that many of the single dwellings must be of the present row type, or some pattern offering equivalent density.

This relatively high average density must be understood in the light of the central city's position and function in the metropolitan area as a whole, the outer parts of which must naturally accommodate many who prefer more spacious living.

In recompense the City must provide for its own people more park and playground facilities, and must strive toward higher standards of building construction and block design to preserve the amenities of light, air, privacy and outlook.

Results in Terms of Density

But the real significance of these figures is only seen when they are broken down into the resulting densities for different types of housing. The process is somewhat complex, but the figures given in Table 19 on the following page have been carefully worked out and represent, it is believed, a safe approximation to the actual possibilities at various population levels.

In preparing this table the densities for all but the large apartments were assumed to stay within a narrow range, based largely upon present usage. The average density for "Small Apartments" was fixed, by definition, at from 90 to 120 persons per acre. Proportions of population were then assigned to each type of dwelling in such a manner as to produce a range of average densities for "Large Apartments" beginning at about 150 persons per acre. These proportions were varied from existing proportions only to the extent made necessary by the other assumptions. Thus they reflect the characteristics of San Francisco, modified to take advantage of a full use of the land and to indicate the probable results at various assumed totals of population.

For each type of dwelling, the first line of figures gives the proportion of the increasing population, the second line gives the proportion of the diminishing total residence land available. The net density, in the third line, is seen to increase for each type as the total population increases. All these figures have been reduced to the form of a diagram in Plate 8 (page 2). The horizontal spaces on each of the 6 lines in the diagram indicate the amount of land in each type of use (including the non-residence uses), while the heavy stepped line at the left indicates the proportionate density of the five residence uses. This line extends over to show the use of some of the commercial area for residence above the ground floor. It was estimated that from 7 to 12 percent of the population would be thus accommodated.

TABLE 19

RESULTS IN TERMS OF DENSITY

Type of Dwelling	Assumed Population (000 omitted)					
	500	600	700	800	900	1, 00
Single Detached Houses						
Could Accommodate (1)	34%	22%	16%	14.5%	12.5%	11%
Proportion of Land (2)	64%	50%	38%	38%	38%	39%
Persons per Acre	22	23	27	30	30	30
Row Houses (Single Family)						
Could Accommodate	20%	23%	25%	21%	16.5%	13%
Proportion of Land	19%	25%	33%	31%	29%	25%
Persons per Acre	45	48	49	53	53	56
2-Family Dwellings						
Could Accommodate	12%	10%	8%	6%	5%	4%
Proportion of Land	7%	7%	7%	6%	6%	5%
Persons per Acre	69	72	75	78	81	84
Small Apartment Bldgs.						
Could Accommodate	12%	17%	18%	19%	19%	20%
Proportion of Land	6%	10%	12%	15%	15%	18%
Persons per Acre	90	90	95	105	114	120
Large Apartment Bldgs.						
Could Accommodate	15%	20%	24%	29.5%	36%	40%
Proportion of Land	4%	8%	9%	11%	12%	13%
Persons per Acre	152	152	166	202	270	328
Dwellings over Commerce						
Proportion of Population	7%	8%	9%	10%	11%	12%

(Not occupying residence land,as defined)

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(1) Percentages on first lines are based on the assumed total population, which increases in successive columns from 500,000 to 1,000,000.

(2) Percentages on second lines are based on the total land available for residence, which decreases in successive columns from 11,975 acres to only 9,350 acres, as shown in Table 18.

The comments which follow are conclusions drawn from a study of Table 19, and are illustrated graphically on Plate 8 (page 52).

Single-Family Dwellings are covered in the first two sections of the table. Reading across, it is seen first that the proportion of the population that could be accommodated in detached single-family dwellings decreases rapidly from 34% to 11%, even when lot sizes are decreased so as to raise the average of 22 persons per acre to an average of 30 persons per acre. But the proportion of residence land required for these remains high, diminishing from 64% to a little over 39% of the total of such land.

Row houses, with densities corresponding to a range in average lot-size of 3200 to 2600 square feet per unit, would have to be increased at first in number and proportion, then give way to multiple dwellings; only caring for about 13% at the 1,000,000 level.

Figures from Table 19 for the two types of single dwellings, when added together present some data of interest, brought out in Table 20, which also shows the results of the survey for this use.

TABLE 20

SINGLE DWELLINGS - DETACHED AND ROW-HOUSES

	Found in Survey	Possible for Various Populations		
		600,000	800,000	1,000,000
Proportion of Population	41%	45%	35.5%	24%
Population (in thousands)	262	270	284	240
% Residence Land	70	75	69	64
Acres	4827	8614	7037	5987
Persons per Acre	54	31	40	40
Dwelling Units per Acre	16	9	12	12
Sq. Ft. per Unit	2710	4830	3630	3630

Here it is shown that at the time of the survey, 4827 acres were used for single-family dwellings of both types, with 16 houses to the acre. (Only 4920 acres are zoned for this use.) Yet, if all available land were developed, it would be possible to allow over 7000 acres for it with a population of 800,000. Also, more people could be accommodated in this type of dwelling, with an average area per dwelling unit of 3630 square feet instead of the present average of 2710 square feet.

If, instead of 30 to 40 persons per acre, we should accept as standard the present deplorably high average density in all single dwellings, (54 per acre) the overload in apartment areas would be somewhat less throughout than is shown in Table 19. But this would be no improvement in the general picture. It has been preferred to assume that the large apartments would take the place of the least desirable (most closely built) single and row-houses, rather than the better types; and that development in outlying vacant areas would reflect higher standards of lot-size than those now prevalent.

Although the proportion of single dwelling units is gradually reduced (in Table 19) to less than a quarter of the total, this type would still, for each assumed population, require more land than is now zoned R-1, and would do so even at lot-sizes now prevailing. About two-thirds of the residence land will in every case be used for single dwellings - a fact of importance in connection with any proposed zoning changes. Distinction should also be made in the future between the detached and the row type of dwelling, as they involve quite different patterns of density and the proportion of each will vary in proportion to the population suggested as optimum for any given part of the city.

Multiple Dwellings (including 2-family houses) now provide for over half the population of the city. About 12% of the people live in apartments where the ground floor is used for business. The non-use of a fourth of the land today has had the effect of producing a high density in the larger types of multiple dwellings, approaching that which would need to exist only with a population of 900,000 if all the land were utilized. This indicates the importance of developing good transportation so as to bring it all into active and appropriate use. Improper zoning, bad street alignments, and the existence of obsolete buildings in the vicinity are also obstacles to the use of vacant land which deserve attention.

The most important conclusion to be drawn from the tables and the chart, however, lies in the inevitable forcing of population (as the total increases) into the higher categories of density. Non-residence uses require more land, and less remains for residence. The existing good single and two-family dwellings tend to remain in use, and the new population is thus forced to make more intensive use of the diminishing residence area. This produces, to take an example, a strong probability that if plans for land use were to be based upon an expectation of 900,000 persons, it would be necessary to count on housing (in addition to nearly 100,000 persons in apartments over business uses) some 324,000 (1) persons in large apartments at an average density of 270 persons per acre.

Allowing for streets, this would require an area of about 2.7 square miles, solidly built up to an average of five stories in height, with over 60% of the sites covered. (2) This may be compared

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(1) Three times the number so accommodated in 1940.

(2) To provide approximately 500 square feet of gross floor area per person, including garage space, halls, elevators, etc. Higher standards as to floor space or site coverage would require proportionately taller buildings.

EFFECTS OF VARIOUS ASSUMED POPULATIONS ON THE USES OF LAND

With all available land in urban use, the proportion of dwellings of each type and the densities of population in each type of dwelling are influenced by the increasing requirements of non-residence uses

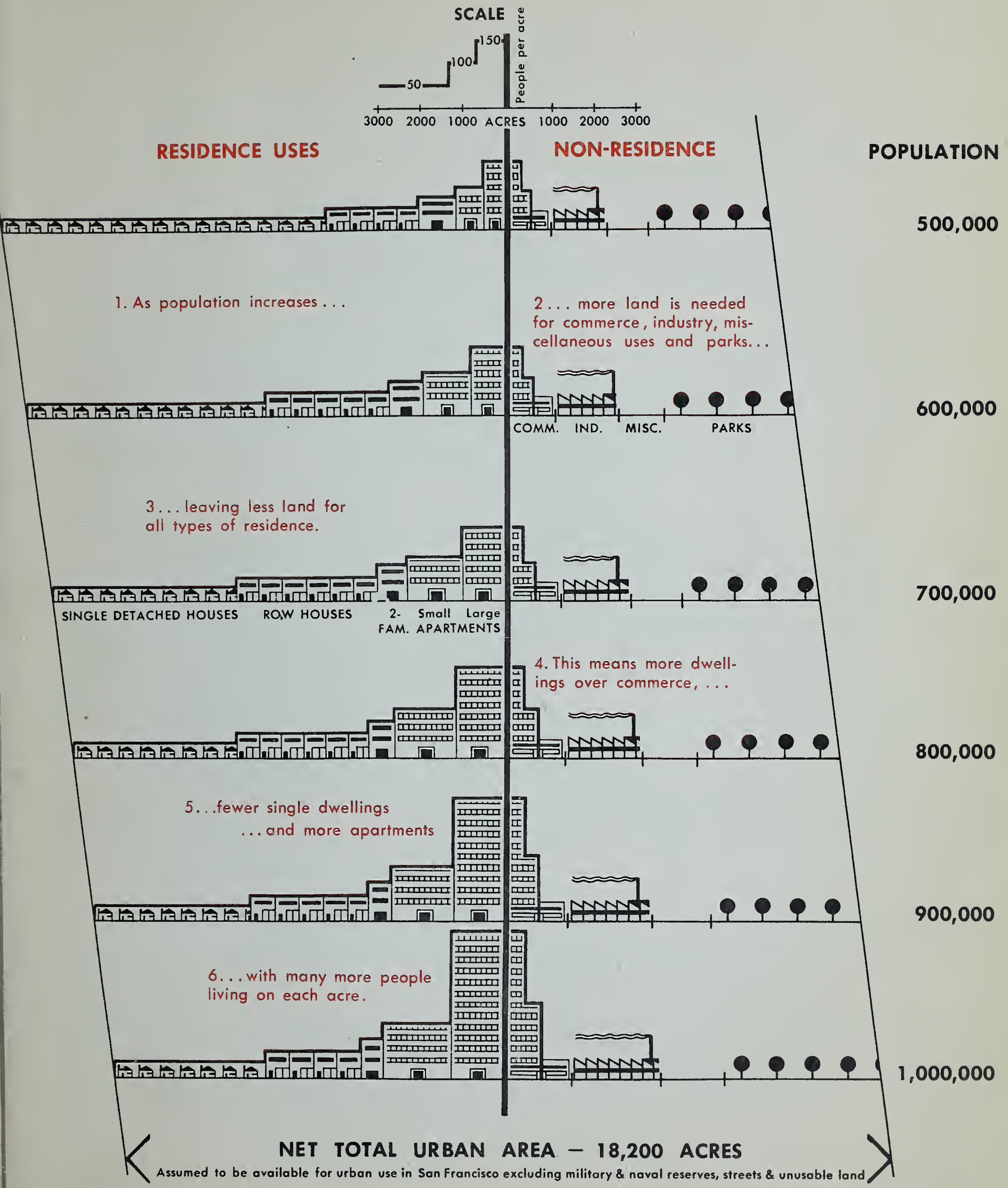
SCALE
50
100
150
People per acre
3000 2000 1000 ACRES 1000 2000 3000
RESIDENCE USES
NON-RESIDENCE
POPULATION
500,000
1. As population increases . . .
2 . . . more land is needed for commerce, industry, miscellaneous uses and parks . . .
600,000
COMM.
IND.
MISC.
PARKS
3 . . . leaving less land for all types of residence.
700,000
SINGLE DETACHED HOUSES
ROW HOUSES
2-FAM.
Small
Large
APARTMENTS
4. This means more dwellings over commerce, . . .
800,000
5 . . . fewer single dwellings
. . . and more apartments
900,000
6 . . . with many more people living on each acre.
1,000,000
NET TOTAL URBAN AREA — 18,200 ACRES
Assumed to be available for urban use in San Francisco excluding military & naval reserves, streets & unusable land

PLATE 8

with the area bounded by Geary, Steiner, Fulton and Gough Sts., one fourth of a square mile, where the average density (in 1940) was considerably lower (215 persons per acre). Moreover, there would have to be an additional area of 4.6 square miles, housing 171,000 persons in smaller apartments and 2-family dwellings. The total requirement for multiple dwellings would be 3255 acres, as compared with 2055 acres now used! These figures do not include the apartments over commercial uses, which in the example here would amount to nearly a square mile and accommodate 100,000 persons. These are minimum estimates, based on the assumption that no land remained unused.

As the diagram (Plate 8) shows, all these conditions are accentuated rapidly with any further increase in population. With 11% more people, the density in large apartments increases by 21%, the number so housed by 24%. The congestion which might easily result, in ever sharper contrast to the attractiveness of the outer portions of the metropolitan region, provides its own answer as to whether such a growth is likely to be realized - unless and until the whole region is faced with proportionately high densities. Consideration of these relationships, complex in appearance, but really simple, throws much light upon the problem of loss of population which has been taking place in the central areas of many large cities.

Causes of Decentralization

The characteristics which attract people to suburban areas are spacious living, good neighborhoods, lower costs, home ownership, adequate parks and playgrounds. For these many a commuter sacrifices hours of daily travel time. Clearly, the city-dweller has advantages of quick access to down-town places of employment, but must do with less space about his home. To retain population, or increase it, the city must find ways to offset this by generous provision for local parks, school-sites and playgrounds, and by preventing excessive crowding in some areas while others are retarded or vacant.

In the past, too many plans (some of them calling for vast expenditures of money) have been based upon the optimistic extension of curves showing population increases of prior decades. None of these extensions could be proven to be more than guesses, and few have turned out to be correct.

The real problem is to find out how many people the city can comfortably house, without so reducing living space as to drive out those whose work requires daily movement to the centers of business or industry. With such a maximum established, the emphasis could be upon constructive measures to increase the attractiveness and stability of neighborhoods, the elimination of sub-standard development, and the improvement of inter-urban transportation facilities. Improvements in regional transportation would make the city's cultural, business and industrial facilities more accessible to the population of the surrounding area.

In this way, the selected maximum would be almost sure to be reached, and would tend to contain a larger proportion of permanent residents, actively identified with the city's true functions. Good homes, good schools and playgrounds, with safe and easy access to places of employment will attract the type of family which is an economic asset. But the pursuit of numbers alone may lead to serious problems of unemployment and relief.

The decision to be made, therefore, is whether to aim at a somewhat greater population than we now have, with full understanding of the effect upon the average density on residence land, or to aim at a lower average density without loss of population by encouraging the full use of areas now undeveloped. In either case, emphasis will be upon securing better arrangement of land uses, and a more even distribution of population through the establishment of more careful building and zoning regulations, including provisions for control of density in terms of rooms per acre and percentage of site covered.

At the same time the most congested areas would need to be redeveloped in accordance with modern methods of design. By the use of the latter, densities of population in certain close-in areas might be even higher than at present, but with far better living conditions because of improvements in the plans and in the relationship between building bulk and open spaces.

It will also be desirable to provide, in revising the zoning regulations, for a greater number of categories of residential construction, so as to avoid the present leap from districts permitting single-family dwellings only (but at any density attainable by constant reduction of lot sizes), to second residential districts which permit any and every type of multiple residence, from the 2-family flat to the tall elevator apartment.

Quality of Uses

In this report we have been concerned only with the amounts and the distribution of land used for various urban purposes. Valuable as it is, such an analysis is of course incomplete, since it does not take into account the quality of the use itself.

With reference to residence land, a vast amount of data concerning the age and condition of structures, by type of construction, rentals, ownership and occupancy are already available. This information will be useful in connection with studies of neighborhoods, so that those which are doing well may be protected, and those which need remedial action because of advancing blight may be identified.

Further study of commercial and industrial areas will also be necessary, in order to learn more about the efficiency with which land in various locations serves these purposes. The same is true of many recreational and institutional uses of land, and it should not be inferred that the present report can take the place of such studies.

Some Underlying Factors

The distinctive characteristics of land use in San Francisco which have been thus briefly summarized are not accidental or hap-hazard. They result from a variety of inter-acting forces. Among these are:

(1) the peculiarly restricted space available,

(2) the irregular topography

(3) the climate,

(4) early practices in lot and block layout,

(5) the requirements of national defense,

(6) the development of the central portion prior to the widespread use of the motor car,

(7) the make-up of the economic base--shipping, wholesale and retail merchandising, processing of foods and light manufacturer, and the attractiveness of the city as a tourist center,

(8) the age and sex distribution of the population,

(9) the racial distribution of the population

(10) high land prices and speculation in land and buildings,

(11) the desire for home ownership,

(12) the system of mass transportation,

(13) the philanthropic endeavors of individuals and citizens' groups,

(14) the quality and amount of municipal regulation of private land,

(15) the types and adequacy of public buildings and public works,

(16) the obsolescence of existing structures of all types.

Some of these are fixed by natural laws; some will be subject to predictable variations; while a third group are in the field of conscious determination by the people and their representatives in municipal government. Action with reference to the first group must consist of taking the greatest possible advantage of the favorable factors and fitting land uses to the natural surroundings. In

the second group, justification is found for careful studies of trends in such factors as industrial employment, proportion of children in school age groups, and similar matters.

The Need for Community Action

But the most important factors in connection with the Master Plan are those which may be altered by the conscious effort of the community. Here lies a clear responsibility. The kind of a city that we shall have in the future depends upon the determination, the energy and the vision with which this task is approached.

At every hand are evidences of the serious effects of unregulated development, improper uses of land and buildings, and inadequate provision for obvious needs. Land subdivision policies of the past have been conspicuously haphazard and shortsighted. In the older parts of the city, buildings long since obsolete prevent more appropriate use of the sites they occupy, and, what is worse, deter the natural development of entire neighborhoods.

The costs to the community in time, health and money of ill-adjusted and inharmonious uses of land are immense, and increasing daily. Ways and means must be found for the re-assembly, re-evaluation and re-development of areas which in their present state are a genuine detriment rather than an asset to the city. But action to remedy these ills, since it must be a community action, has failed in the past under the weight of inertia, in the absence of a dynamic and inspiring over-all plan to which citizens might give their collective support.

The next step with the information now available and being assembled, will be the preparation of a Master Plan of Land Use. This will serve as a guide to the re-adjustment of the zoning plan, to the modernizing of the zoning ordinance itself, to needed adjustments in building and housing codes, (with allowance for new materials and methods), and to the selection of areas for redevelopment. With other parts of the Master Plan it can lead toward the creation of a city in which all citizens may be proud. The San Francisco of the future must be strong, and equipped to play a large part in the affairs of the nation. It will be a better city if we can make wise use of our exceptional but limited land resources.

APPENDIX A

AREAS OF CENSUS TRACTS

Compiled by the City Planning Commission - 1944. Areas from planimeter readings, adjusted to check total as given (1941) by the Real Estate Department. Figures are to be taken as relatively rather than absolutely correct. These Census Tracts were the basis for the 1940 Census, and for the Real Property and the Land Use Surveys.

Tract	Area
A-1	214.5
A-2	147.0(1)
A-3	66.1
A-4	85.2
A-5	47.9
A-6	45.2
A-7	55.8
A-8	61.6
A-9	59.2
A-10	61.1
A-11	44.2
A-12	38.0
A-13	25.4
A-14	21.5
A-15	15.0
A-16	89.8
A-17	144.9
A-18	30.4
A-19	30.8
A-20	46.2
A-21	45.6
A-22	50.8
A-23	105.8
	1532.0
B-1	200.6(1)
B-2	121.2(1)
B-3	124.7
B-4	137.9
B-5	91.8
B-6	104.9
B-7	135.9
B-8	154.1
B-9	87.8
B-10	58.5
	1217.4
C-1	1470.0
D-1	102.4
D-2	135.8
	238.2
E-1	148.4
E-2	103.1
E-3	155.5
	407.0
F-1	238.2
G-1	130.6
G-2	178.2
G-3	204.6
G-4	368.0
	881.4
H-1	95.3
H-2	148.5
	243.8
I-1	1101.9
J-1	46.8
J-2	68.4
J-3	57.3
J-4	180.2
J-5	277.2
J-6	83.8
J-7	125.0
J-8	68.4
J-9	39.0
J-10	91.2
J-11	69.4
J-12	60.8
J-13	76.8
J-14	95.1
J-15	87.5
J-16	117.3
J-17	108.3
J-18	74.3
J-19	112.9
J-20	151.6
	1991.3
K-1	363.1
K-2	194.9
K-3	177.4
K-4	250.4
K-5	383.5
K-6	210.7
	1580.0
L-1	684.5(2)
L-2	305.2
L-3	181.1
L-4	987.7(2)
L-5	1284.5(2)
	3443.0
M-1	139.4
M-2	160.4
M-3	91.4
M-4	271.9
M-5	426.4
M-6	385.3
M-7	265.0
M-8	379.4
M-9	371.1
M-10	634.6
M-11	393.6
	3518.5
N-1	109.1
N-2	84.2
N-3	66.3
N-4	314.4
N-5	157.5
N-6	137.8
N-7	86.2
N-8	85.4
N-9	76.6
N-10	77.5
N-11	103.4
N-12	185.3
N-13	244.5
N-14	123.5
N-15	312.0
	2163.7
O-1	608.1
O-2	179.7
O-3	554.9
O-4	435.2
O-5	615.1
O-6	212.4
O-7	440.0
O-8	476.2
O-9	218.6
	3740.2
P-1	428.4
P-2	592.8
P-3	987.7
	2008.9
Q-1	951.5
R-1	1613.5(3)
TOTAL	28,340.5(4)

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1) Includes submerged portion of Park

2) Does not include submerged land near Hunters Point, some of which may now be filled.

3) Includes Lake Merced, 368 acres

4) R.E. Dept. gives 27,920 acres exclusive of Lake Merced, and of 52.5 acres for submerged portions of Aquatic and Marina Parks. (Tracts A-2, B-1 and B-2)

POPULATION DENSITY BY CENSUS TRACTS

Persons per Acre of Gross Area (see Appendix A).
1940 - Population, U. S. Census.
1942 - Population, Air Raid Warden Survey.

Tract	Density 1940	Density 1942	Tract	Density 1940	Density 1942	Tract	Density 1940	Density 1942
A-1	9.9	6.9	G-1	46	46	M-3	50	48
A-2	30	34	G-2	43	44	M-4	26	28
A-3	75	72	G-3	28	30	M-5	16	19
A-4	66	67	G-4	19	21	M-6	28	27
A-5	72	94	H-1	49	51	M-7	25	26
A-6	97	114	H-2	48	48	M-8	18	21
A-7	98	106	I-1	0.2	0.2	M-9	17	17
A-8	84	89	J-1	53	69	M-10	1	5
A-9	85	93	J-2	75	96	M-11	10	14
A-10	80	111	J-3	59	69	N-1	42	52
A-11	91	106	J-4	31	34	N-2	63	71
A-12	154	186	J-5	24	28	N-3	56	57
A-13	181	184	J-6	67	76	N-4	14	14
A-14	299	281	J-7	75	80	N-5	42	45
A-15	206	222	J-8	95	113	N-6	43	43
A-16	30	38	J-9	82	100	N-7	70	76
A-17	23	43	J-10	60	78	N-8	63	72
A-18	155	210	J-11	52	68	N-9	57	66
A-19	121	153	J-12	85	100	N-10	64	70
A-20	119	155	J-13	57	70	N-11	47	48
A-21	150	242	J-14	62	69	N-12	37	37
A-22	86	134	J-15	78	87	N-13	5.7	6.9
A-23	47	71	J-16	51	60	N-14	50	48
B-1	33	35	J-17	71	84	N-15	19	18
B-2	41	46	J-18	59	66	O-1	13	15
B-3	49	52	J-19	31	36	O-2	39	41
B-4	53	57	J-20	60	65	O-3	17	18
B-5	57	64	K-1	13	16	O-4	18	19
B-6	56	68	K-2	41	58	O-5	11	12
B-7	38	41	K-3	35	47	O-6	16	15
B-8	41	46	K-4	6.7	8.5	O-7	14	16
B-9	53	60	K-5	0.1	0.1	O-8	10	14
B-10	62	79	K-6	13	13	O-9	24	25
C-1	4.1	(?)	L-1	13	15	P-1	25	28
D-1	47	49	L-2	36	39	P-2	14	21
D-2	42	43	L-3	44	47	P-3	6.6	8.5
E-1	20	21	L-4	5.9	8.2	Q-1	6.6	11
E-2	39	39	L-5	6.4	6.6	R-1	0.1	0.1
E-3	48	49	M-1	16	17.5			
F-1	1.0	1.0	M-2	31	34			

RESIDENTIAL DENSITY - SELECTED BLOCKS

Some Typical Examples, from the Real Property Survey, 1938.

Census Tract	Block No.	Study Area	Dwlg. Units Per Acre	Persons(1) Per Acre	Type Dwlgs.	Average Rental
A-3	100	North Beach	55.6	170	Multiple	$29.90
A-4	76	"	55.4	164	Multiple	25.52
A-7	150	"	17.1	48	Single	96.59
A-14	193	" (2)	253.5	725	Multiple	13.17
B-2	914	Marina	71.5	192	Multiple	51.31
B-2	922	"	55.8	149	Mixed	60.91
B-2	925	"	13.7	37	Single	91.97
G-1	1557	Park-Presidio -W	33.7	111	Mixed	52.41
H-2	1633	" " -E	15.5	49	Single	60.91
J-2	652	Western Add'n.	67.3	189	Mixed	29.34
J-5	1168	" "	44.6	139	Mixed	29.17
J-6	697	" "	110.0	297	Multiple	17.54
J-10	747	" "	100.0	214	Mixed	16.51
M-7	6778	Visitacion	13.5	45	Single	42.94
N-15	6717	Noe-Glen Park	16.0	53	Single	28.89
O-5	3156	Ocean Avenue	14.8	47	Single	39.98
O-7	3046	(St. Francis Woods)	7.5	26	Single	87.12
P-1	1877	Sunset	15.7	50	Single	49.90

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(1) Based on "persons per dwlg. unit" as given for the Tract by the U.S. Census (1940).

(2) In Chinatown; all residences over ground-floor commercial use. In this Block and in Blocks 697 and 1168, a small portion was not in residence use. This was deducted before calculating the density.

SOURCES OF DATA USED IN THIS REPORT

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1. The Real Property Inventory (Cost-$300,000)
   WPA Project 665-08-3-173
   Published in 1940 (Housing only)
2. The Land Use Survey (Cost-$70,000)
   WPA Projects 4249 and 6695
   1936-1938 (Incomplete)
3. U. S. Bureau of the Census
   Population and Housing Statistics-1940
4. Aerial Photographs
   Office Files - 1937
5. Areas of Census Tracts - 1944
   (See Appendix A)
6. Population Density by Census Tracts - 1944
   (See Appendix B)
7. Tabulation of City Blocks and Areas - 1944
8. Block Cards Showing Land Uses - 1944
9. Tables of Land Use Data by Census Tracts - 1944

(The last five items were prepared especially for the purposes of this report by the staff of the City Planning Commission).

Plates 2 to 7 showing the distribution of selected uses of land were drawn principally from information contained on maps prepared by the WPA (1936-1938). In certain places, notably in Census Districts P and Q (Sunset-Parkside), where additional and later data were available, they have been brought more nearly up to date. No effort was made, however, to indicate changes specifically due to war-time activities of a temporary nature.

In Census Districts L, M, and R, and in Census Tracts N 12-15 inclusive and O 5-9 inclusive, only blocks containing non-residential uses were measured in detail; the amounts in residential use and vacant were then calculated for these areas from dwelling unit statistics and careful estimates of average lot sizes.

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